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SESSIONAL PAPERS

VOLUME 10

SECOND SESSION OF THE ELEVENTH PARLIAMENT

OF THE

DOMINION OF CANADA

SESSION 1910



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See also Numerical List, Page 5.

ALPHABETICAL INDEX

TO THE

SESSIONAL PAPERS

OF THE

PARLIAMENT OF CANADA

SECOND SESSION, ELEVENTH PARLIAMENT, 1910.

A		C	
Adulteration of Food.. . . .	14	Canadian Northern Railway.. . . .	108
Agriculture, Annual Report.. . . .	15	Canadian Pacific Railway:—	
Alberta Lands.. . . .	76	Business with Interior Department.. . . .	53
Alcoholism, International Congress on.. . . .	56	Lands sold by.. . . .	55a
Alward, H. F., Report of.. . . .	153	Canal Statistics.. . . .	20a
Annuities Act.. . . .	65	Carson, R.. . . .	126
Application for Patent.. . . .	118	Causeway, Caribou, N.S.. . . .	159
Armouries and Drill Halls.. . . .	156, 156a	Central Park Post Office.. . . .	147
Arthabaska Gazette.. . . .	101	Charleston Post Office.. . . .	115
Astronomer, Chief Report of.. . . .	25a	Chartered Banks.. . . .	6
Atlantic Fisheries.. . . .	96	Charters Granted.. . . .	120
Auditor General, Annual Report.. . . .	1	Circle, Fritz.. . . .	171
B		Civil Service:—	
Banks, Chartered.. . . .	6	Commissioner's Annual Report.. . . .	31
Banks Suspended.. . . .	128	Employees' Salaries.. . . .	183
Banks, Unpaid Balances in.. . . .	7	Insurance.. . . .	39
Beauharnois Canal.. . . .	150	List.. . . .	30
Becher, C. D. T.. . . .	165	Superannuations.. . . .	41
Black Foot Reserve.. . . .	140	Temporary employees.. . . .	164
Bonds and Securities.. . . .	46	Clear Lake, Manitoba.. . . .	139
Bow River Collieries.. . . .	152	Coal Fields, Nova Scotia.. . . .	36a
British Canadian Loan and Investment		Coinage, Canadian.. . . .	127
Co.. . . .	119	Combines and Monopolies.. . . .	160
British Columbia:—		Commissions Appointed.. . . .	182, 182a
Dominion Lands.. . . .	49	Conference, Imperial Defence.. . . .	29a
Lighthouses.. . . .	73	Coulter, Robert M., Report of.. . . .	43
		Criminal Statistics.. . . .	17

C

Cruisers, Purchase of.. . . .	146, 146a
Cumberland Coal and Railway Co.. . .	141, 141a
Customs Department, Annual Report..	11

D

<i>Daily Telegraph</i> Publication Co.. . . .	124
Dairy and Cold Storage Commissioner.	15a
Dividends Unpaid in Banks.. . . .	7
Dog-Fish Reduction.. . . .	81, 96
Dominion Coal Company.. . . .	141, 141a
Dominion Fisheries Commission.. . .	90, 90a
Dominion Lands.. . . .	48, 49, 52
Dominion Police.. . . .	66
Dredges Owned by Government.. . .	114
Drill Halls.. . . .	156, 156a
Dunn, John A.. . . .	118

E

Elections, House of Commons.. . . .	18, 18a
Electrical Power.. . . .	170
Electric Light, Inspection of.. . . .	13
Elliott Bros..	126
English Mails.. . . .	148
Estimates.. . . .	3 to 5c
Excise Revenue.. . . .	12
Exhibitions, Foreign.. . . .	136
Experimental Farms.. . . .	16
Explosives, Accidents from.. . . .	93
External Affairs, Report.. . . .	29b

F

Fisheries, Annual Report.. . . .	22
Food Fishes.. . . .	105
Forest Reserve Act.. . . .	50
Free Mail Delivery.. . . .	102, 102a
French Treaty.. . . .	44

G

Gardiner, Wm. Reid.. . . .	175
Gas, Inspection of.. . . .	13
Gas, Pintsch and Acetylene.. . . .	87
Geographic Board.. . . .	21a
Geological Survey Report.. . . .	26
Georgian Bay Ship Canal.. . . .	181
Germany, Trade with.. . . .	10g, 10h
Goby, Mrs.. . . .	53
Government Annuities Act.. . . .	65
Governor General's Warrants.. . .	38
Grain, Shipment of.. . . .	77
Grand Trunk Pacific Employees.. . .	154
Guns sent to Esquimalt.. . . .	116

H

Harbour Commissioners.. . . .	23
"Hestia", Wreck of the.. . . .	83, 83a
High Commissioner, Report of.. . .	25c
Homestead Entries.. . . .	137

H

House of Commons:—	
By-Elections.. . . .	18, 18a
Internal Economy.. . . .	45
Names of Members.. . . .	69
Organization of Staff.. . . .	169
Reduction of Representation.. . . .	100
Sessional employees.. . . .	149
Speaker Blanchet.. . . .	92
Hudson Bay Railway Surveys.. . . .	20d
Hydro-Electric Power Commission.. .	170
Hydrographic Survey.. . . .	133

I

Immigrants at Grosse Isle.. . . .	80k
Immigrants at Quebec.. . . .	79, 80 to 81i
Immigrants, Inspection.. . . .	80f
Immigration Agents.. . . .	86, 86a
Immigrations Regulations.. . . .	59
Imperial Conference Secretariat.. . .	168
Imperial Naval Defence.. . . .	29a
Incubators and Brooders.. . . .	70
Indian Affairs, Annual Report.. . . .	27
Indian Reserves.. . . .	61
Indians in British Columbia.. . . .	174
Inland Revenue, Annual Report.. . .	12
Insurance, Abstract.. . . .	9
Insurance, Annual Report.. . . .	8
Intercolonial Railway:—	
Derailments.. . . .	98b
Dismissals from.. . . .	98d, 98e
Passes.. . . .	98f
Pay Lists and Railway Ties.. . . .	98a
Train, Oxford Junction and Pictou..	98c
Wire Fencing.. . . .	98
Interior, Annual Report.. . . .	25
International Boundary Waters Treaty.	104a (1909)

International Congress on Alcoholism..	56
International Fisheries Commission.. .	105
International Waterways Commission.	19c to 19e
Intoxicants in Northwest.. . . .	109

J

Jemmett, Captain.. . . .	158
Judges, Appointment of.. . . .	123
Justice, Annual Report.. . . .	34

K

Kelmont Post Office.. . . .	115
Kenig & Co.. . . .	173

L

Labour Department, Annual Report.. .	36
Lac du Bonnet Fisheries.. . . .	90, 90b
Lachine Canal.. . . .	91
La Décharge River.. . . .	180

L

Land Titles Act..	112
Lavoie, Dr. Jos. P..	80j
Lethbridge, Experimental Farm.. . . .	165
Lethbridge Post Office..	89, 89a
Library of Parliament, Annual Report..	33
List of Shipping..	21b
Lobster Industry..	22a, 103

M

Mail Delivery, Free..	102, 102a
Mails, English..	148
Manitoba and Dominion Governments..	122
Manitoba Boundaries..	122a
Manitoba Land Sale..	161
Marine, Annual Report..	21
Measures, Inspection of..	13
Military College..	117
Military Reserve..	138
Militia Clothing..	144
Militia Council, Annual Report.. . . .	35
Militia Council, Interim Report.. . . .	35a
Militia General Orders..	54
Mines, Report of Department.. . . .	26a
Montreal, Branch Post Offices.. . . .	176, 176a
Montreal Turnpike Trust..	84
Mounted Police..	28
Mudie, Allan R..	68

N

Napanee River..	63, 88
National Parks of Canada..	97
National Transcontinental Railway:—	
Construction in New Brunswick..	42b
Contracts..	42i
Dominion Police Constables.. . . .	42
Excavation Classification..	42c, 42h, 42j
Fifth Report of Commissioners.. . .	37
Interim Report..	42g
Legal Services..	42c
Mr. McIntosh..	42d
Names of Engineers..	42f
Resignation of Hugh D. Lumsden..	42a
Naval and Military Defence of Empire..	29a
Naval Defence Expenses..	72
"Niobe" Cruiser..	146a
North Atlantic Trading Co..	85, 85a
Northwest Irrigation Act..	106
Nova Scotia Coal Fields..	36a

O

Oil Lands..	62
Old Proprietor Ledge..	83, 83a
Ottawa Improvement Commission.. . .	55
Ottawa, Official Residences in.. . . .	110, 110i

P

Paterson, Thomas..	75
P. E. I. Projected Railways..	130, 130a
P. E. I. Winter Steamers..	129
Pembina River..	90c
Penitentiaries, Annual Report.. . . .	34
Petroleum Oil, Crude..	131
Piegan, Indian Reserve..	74
Police, Royal Northwest Mounted.. . .	28
Port Arthur Dry Dock..	94a
Postmaster General, Annual Report..	24
Printing, &c., Government..	142
Public Accounts, Annual Report.. . . .	2
Public Printing and Stationery.. . . .	32
Public Works, Annual Report..	19

Q

Quarantine, Frontier Inspectors.. . . .	132
Quebec Bridge..	173
Quebec Immigration Office..	79, 80 to 80m
Quebec Rock City Tobacco Co..	163

R

Railway Commissioners, Report of.. . .	20c
Railway Commissioners, Vacancy among	99
Railway Crossings..	60
Railways and Canals, Annual Report..	20
Railway Statistics..	20b
"Rainbow" Cruiser..	146
River des Prairies..	107, 107a
Rocky Mountain Park..	51
Royal Northwest Mounted Police.. . .	28

S

Sale of Land in Manitoba..	161
Salmon River, N.S..	82
Saskatchewan Lands..	76
Saskatchewan River..	167
Saskatchewan Supreme Court..	145
Sault Ste. Marie Dry-dock..	94
Sault Ste. Marie Lock..	157
Sauve, Angus..	104
School Lands..	111
Seal Cove..	83, 83a
Secretary of State, Annual Report.. . .	29
Section 29, Township 9..	67
Shareholders in Chartered Banks.. . .	6
Shipping, List of..	21b
Sibbald, J. F..	75
Skinner's Cove..	155
Soleil Publication Co..	124
Southern Alberta Land Co..	95
Spawn at Snake Island..	71
Statutes Distributed..	184
Steamboat Inspection..	23a
Steam Vessels, Government..	113
St. John River..	179

S

St. Peter's Indian Reserve.. . . .	78 to 78f
Subsidized Steamships.. . . .	10e
Sullivan and Langdon.. . . .	143
Surveyor General, Report of.. . . .	25b

T

Tariff Relations with United States.. . .	10j
Terminal Elevators.. . . .	162, 172, 172a
Toney River.. . . .	155a
Topographical Survey.. . . .	25b
Trade and Commerce.. . . .	10
Trade and Navigation.. . . .	11
Trade Unions.. . . .	47
Transcontinental Ry. Commissioners..37,	42g
Treaties and Conventions.. . . .	10f
Trent Canal.. . . .	153
Trusts and Mergers.. . . .	160
Tunnel, Prince Edward Island.. . . .	57

U

Unclaimed Balances in Banks.. . . .	7
Unforeseen Expenses.. . . .	40
United States Fishing Vessels.. . . .	64
United States, Trade with.. . . .	10i

V

Vigie Publication Co.. . . .	124
------------------------------	-----

W

Wakeham, Commander, Report of.. . .	103
Walton, Geo.. . . .	151
Warwick, Thos. G.. . . .	68
Weights, Measures, &c.. . . .	13
Wharves, Varions.. . . .	134, 135
Whig Publishing Co.. . . .	121, 121a
Windygates Post Office.. . . .	177
Winnipeg Post Office.. . . .	178, 178a
Wrecking Plant.. . . .	125

See also Alphabetical List, Page 1.

LIST OF SESSIONAL PAPERS

Arranged in Numerical Order, with their titles at full length; the dates when Orderedd and when Presented to the Houses of Parliament; the Names of the Senator or Member who moved for each Sessional Paper, and whether it is ordered to be Printed or Not Printed.

CONTENTS OF VOLUME 1.

(This volume is bound in two parts.)

1. Report of the Auditor General for the year ended 31st March, 1909. Volume I, Parts A, C to J (inclusive) L, M, N; Volume III, Parts V, W, X, Y. Presented 12th November, 1909, by Hon. W. S. Fielding. Volume II, Parts B, K and O to U, (inclusive), presented 12th January, 1910, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 2.

2. Public Accounts of Canada, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

3. Estimates of the sums required for the services of Canada for the year ending on the 31st March, 1911. Presented 18th November, 1909, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

4. Supplementary Estimates of sums required for the service of Canada, for the fiscal year ending 31st March, 1910. Presented 24th November, 1909, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

5. Further Supplementary Estimates of sums required for the service of Canada, for the fiscal year ending 31st March, 1910. Presented 14th March, 1910, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

- 5a. Supplementary Estimates of sums required for the service of Canada for the fiscal year ending 31st March, 1911. Presented 3rd February, 1910, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

- 5b. Further Supplementary Estimates of the sums required for the service of Canada, for the fiscal year ending 31st March, 1911. Presented 30th April, 1910, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

- 5c. Further Supplementary Estimates of the sums required for the service of Canada, for the fiscal year ending 31st March, 1910. Presented 20th April, 1910, by Hon. W. S. Fielding.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 2—Continued.

- 6.** List of Shareholders in the Chartered Banks of Canada, as on the 31st December, 1909. Presented 21st March, 1910, by Sir Wilfrid Laurier.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 3.

- 7.** Report of dividends remaining unpaid, unclaimed balances and unpaid drafts and bills of exchange in Chartered Banks of Canada, for five years and upwards, prior to 31st December, 1909.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 4.

- 8.** Report of the Superintendent of Insurance for the year ended 31st December, 1909.

Printed for both distribution and sessional papers.

- 9.** Abstract of Statements of Insurance Companies in Canada, for the year ended 31st December, 1909.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 5.

- 10.** Report of the Department of Trade and Commerce, for the fiscal year ended 31st March, 1909. Part I.—Canadian Trade. Presented 12th November, 1909, by Hon. W. S. Fielding..*Printed for both distribution and sessional papers.*

- 10a.** Report of the Department of Trade and Commerce. Part II.—Canadian Trade with France, Germany, United Kingdom and United States. Presented 12th November, 1909, by Hon. W. S. Fielding..*Printed for both distribution and sessional papers.*

- 10b.** Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1909. Part III.—Canadian Trade with foreign countries except France, Germany, United Kingdom and United States. Presented 29th November, 1909, by Sir Wilfrid Laurier..*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 6.

- 10c.** Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1909. Part IV.—Canadian Trade: Miscellaneous. Presented 12th November, 1909, by Hon. W. S. Fielding..*Printed for both distribution and sessional papers.*

- 10d.** Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1909. Part V.—Grain Statistics, including the crop year ended 31st August, 1909, and season of navigation ended 10th December, 1909. Presented 18th March, 1910, by Hon. W. S. Fielding..*Printed for both distribution and sessional papers.*

- 10e.** Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1909. Part VI.—Subsidized Steamship Services, with statistics showing steamship traffic to 31st December, 1909, and estimates for fiscal year 1910-1911. Presented 3rd May, 1910, by Sir Wilfrid Laurier..*Printed for both distribution and sessional papers.*

- 10f.** Report of the Department of Trade and Commerce for the fiscal year ended 31st March, 1909. Part VII.—Trade of Foreign Countries and Treaties and Conventions. Presented 25th April, 1910, by Sir Wilfrid Laurier.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 6—*Continued.*

- 10g.** Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 14th February, 1910, in respect to trade relations with Germany. Presented 15th February, 1910, by Hon. W. S. Fielding.
Printed for sessional papers.
- 10h.** Trade relations with Germany.—No. 2. Presented 2nd March, 1910, by Hon. W. S. Fielding.*Printed for sessional papers.*
- 10i.** Correspondence respecting negotiations between the United States and the Dominion of Canada relative to trade relations. Presented 27th April, 1910, by Hon. W. S. Fielding.
Printed for sessional papers.
- 10j.** Tariff relations between the United States and the Dominion of Canada. Presented 3rd May, 1910, by Sir Richard Cartwright.
Printed for sessional papers.

CONTENTS OF VOLUME 7.

- 11.** Report of the Department of Customs, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. Wm. Paterson.
Printed for both distribution and sessional papers.
- 12.** Inland Revenues of Canada. Excise, &c., for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 8.

- 13.** Inspection of Weights, Measures, Gas and Electric Light, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.
- 14.** Report on Adulteration of Food, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. W. Templeman.
Printed for both distribution and sessional papers.
- 15.** Report of the Minister of Agriculture, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.
- 15a.** Report of the Dairy and Cold Storage Commissioner, for the year ending 31st March, 1909.*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 9.

- 16.** Report of the Directors and Officers of the Experimental Farms, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.
- 17.** Criminal Statistics for the year ended 30th September, 1909.
Printed for both distribution and sessional papers.
- 18.** Return of By-Elections (Tenth Parliament) of the House of Commons of Canada, held during the year 1908. Presented 4th February, 1910, by Hon. C. Murphy.
Printed for both distribution and sessional papers.
- 18a.** Return of By-Elections (Tenth Parliament) of the House of Commons of Canada, held during the year 1909. Presented 2nd March, 1910, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 10.

- 19.** Report of the Minister of Public Works, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.
- 19a.** (No issue.)
- 19b.** (No issue.)
- 19c.** Supplementary Report of the International Waterways Commission, 1909. Presented 19th November, 1909, by Hon. W. Pugsley.
Printed for both distribution and sessional papers.
- 19d.** Report of the International Waterways Commission on proposed dam and regulation work at foot of Lake Erie, and appendices accompanying said report. Presented 17th February, 1910, by Hon. W. Pugsley. *Not printed.*
- 19e.** Additional correspondence, International Waterways Treaty, and Report on division of Waters of St. Mary and Milk River. Presented 4th April, 1910, by Sir Wilfrid Laurier.
Printed for both distribution and sessional papers.
- 20.** Report of the Department of Railways and Canals, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 11.

- 20a.** Canal Statistics for the season of navigation, 1909. Presented 21st March, 1910, by Hon. G. P. Graham. *Printed for both distribution and sessional papers.*
- 20b.** Railway Statistics of Canada, for the year ended 30th June, 1909. Presented 12th January, 1910, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.
- 20c.** Fourth Report of the Board of Railway Commissioners for Canada, to 31st March, 1908, for the year ending 31st March, 1909. Presented 12th November, 1909, by Hon. G. P. Graham. *Printed for both distribution and sessional papers.*
- 20d.** Report of the Hudson Bay Railway Surveys. Presented 13th December, 1909, by Hon. G. P. Graham. *Printed for both distribution and sessional papers.*
- 21.** Report of the Department of Marine and Fisheries (Marine) for 1908. Presented 15th November, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 12.

- 21a.** Eighth Report of the Geographic Board of Canada, containing all decisions to June 30, 1909. Presented 25th November, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.
- 21b.** List of Shipping issued by the Department of Marine and Fisheries, being a list of vessels on the registry books of Canada on the 31st December, 1909.
Printed for both distribution and sessional papers.
- 22.** Report of the Department of Marine and Fisheries (Fisheries) for 1909. Presented 12th November, 1909, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 13.

- 22a.** Lobster Fishery. Evidence taken before Commander William Wakeham, M.D., (Officer in charge of the Gulf Fisheries Division) in Quebec and the Maritime Provinces. Two volumes. Presented 11th March, 1910, by Hon. W. Templeman. Also copy of the Report of Commander Wakeham in relation thereto.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 14.

- 23.** Report of the Harbour Commissioners, &c., to 31st December, 1908. Presented 13th January, 1910, by Hon. R. Lemieux. *Printed for both distribution and sessional papers.*

- 23a.** Report of the Chairman of the Board of Steamboat Inspection, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. S. A. Fisher.

Printed for both distribution and sessional papers.

- 24.** Report of the Postmaster General, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Sir Wilfrid Laurier.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 15.

- 25.** Report of the Department of the Interior, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. F. Oliver.

Printed for both distribution and sessional papers.

- 25a.** Report of the Chief Astronomer.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 16.

- 25b.** Annual Report of the Topographical Surveys Branch.

Printed for both distribution and sessional papers.

- 25c.** Report of the High Commissioner for Canada, for the year ended 31st March, 1909. Presented 12th November, 1909, by Hon. F. Oliver.

Printed for both distribution and sessional papers.

- 26.** Summary Report of the Geological Survey Branch of the Department of Mines, for the calendar year 1909.

Printed for both distribution and sessional papers.

- 26a.** Summary Report of the Mines Branch of the Department of Mines.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 17.

- 27.** Report of the Department of Indian Affairs, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. F. Oliver.

Printed for both distribution and sessional papers.

- 28.** Report of the Royal Northwest Mounted Police, 1909. Presented 12th January, 1910, by Sir Wilfrid Laurier. *Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 18.

- 29.** Report of the Secretary of State of Canada for the year ended March 31, 1909. Presented 25th November, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.
- 29a.** Report of the Imperial Conference with representatives of the self-governing Dominions on the Naval and Military Defence of the Empire, 1909. Presented 17th November, 1909, by Sir Frederick Borden. Also with additional papers relating to Australia and New Zealand, presented 10th December, 1909, by Hon. L. P. Brodeur.
Printed for both distribution and sessional papers.
- 29b.** Report of the Department of External Affairs, 1909.
Printed for both distribution and sessional papers.
- 30.** Civil Service List of Canada, 1909. Presented 12th January, 1910, by Hon. C. Murphy.
Printed for both distribution and sessional papers.
- 31.** First Annual Report of the Civil Service Commission of Canada, for the period from September 1st, 1908, to August 31, 1909. Presented 10th December, 1909, by Hon. C. Murphy.
Printed for both distribution and sessional papers.
- 32.** Annual Report of the Department of Public Printing and Stationery, for the fiscal year ended 31st March, 1909. Presented 18th April, 1910, by Hon. C. Murphy.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 19.

- 33.** Report of the Joint Librarians of Parliament for the year 1908-9. Presented 11th November, 1909, by the Hon. the Speaker. *Printed for sessional papers.*
- 34.** Report of the Minister of Justice as to Penitentiaries of Canada, for the fiscal year ended 31st March, 1909. Presented 12th November, 1909, by Hon. A. B. Aylesworth.
Printed for both distribution and sessional papers.
- 35.** Report of the Militia Council, for the fiscal year ended 31st March, 1909. Presented 1st December, 1909, by Sir Frederick Borden.
Printed for both distribution and sessional papers.
- 35a.** Interim Report of the Militia Council for the Dominion of Canada on the Training of the Militia during the season of 1909. Presented 25th April, 1910, by Sir Frederick Borden. *Printed for distribution.*
- 36.** Report of the Department of Labour, for the fiscal year ended 31st March, 1909. Presented 12th March, 1909, by Hon. L. M. King.
Printed for both distribution and sessional papers.
- 36a.** Report of the Deputy Minister of Labour on industrial conditions in the Coal Fields of Nova Scotia. Presented 25th November, 1909, by Hon. L. M. King.
Printed for both distribution and sessional papers.
- 37.** Fifth Report of the Commissioners of the Transcontinental Railway, for the year ended 31st March, 1909. Presented 12th November, 1909, by Hon. G. P. Graham.
Printed for both distribution and sessional papers.
- 38.** Statement of Governor General's Warrants issued since the last session of parliament on account of the fiscal year 1909-10. Presented 15th November, 1909, by Hon. W. S. Fielding. *Not printed.*

CONTENTS OF VOLUME 19—Continued.

- 39.** Statement in pursuance of section 17 of the Civil Service Insurance Act, for the year ended 31st March, 1909. Presented 16th November, 1909, by Hon. W. S. Fielding. *Not printed.*
- 40.** Statement of expenditure on account of miscellaneous unforeseen expenses, from the 1st April, 1909, to the 10th November, 1909, in accordance with the Appropriation Act of 1909. Presented 16th November, 1909, by Hon. W. S. Fielding.*Not printed.*
- 41.** Statement of superannuation and retiring allowances in the Civil Service during the year ended 31st December, 1909, showing name, rank, salary, service, allowance and cause of retirement of each person superannuated or retired, also whether vacancy filled by promotion or by new appointment, and salary of any new appointee. Presented 16th November, 1909, by Hon. W. S. Fielding.*Not printed.*
- 42.** Return of constables employed on the Transcontinental Railway, as required under the provisions of section 6, chapter 92, of the Revised Statutes of Canada. Presented 19th November, by Hon. A. B. Aylesworth.*Not printed.*
- 42a.** Return to an order of the House of Commons, dated 16th November, 1909, for a copy of all reports, letters, communications and documents touching or relating to the resignation of Hugh D. Lumsden from his position as Chief Engineer of the National Transcontinental Railway, including a copy of all letters, communications or reports of the said Hugh D. Lumsden to the Prime Minister, touching or relating to his resignation, or to the affairs of the National Transcontinental Railway. Presented 23rd November, 1909.—Mr. Borden.*Printed for both distribution and sessional papers.*
- 42b.** Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all correspondence had between the Minister of Railways and the Transcontinental Railway Commission relating to the sub-letting of contracts for the construction of the Transcontinental Railway in New Brunswick; and the failure of sub-contractors to make payment for supplies and material furnished by farmers, merchants and others for use in said work. Presented 13th December, 1909.—Mr. Crocket.*Not printed.*
- 42c.** Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all correspondence connected with and relating to the letter of the Auditor General to the Secretary of the National Transcontinental Railway Commission of the 18th of August, 1909, in which the Auditor General points out that 64,192 cubic yards of excavation, classified at an average price of 83.06 cents, were subsequently reclassified at \$1.10½ per cubic yard, thereby increasing the cost by the sum of \$17,453.80, and asking for an explanation. Presented 13th December, 1909.—Mr. Lennor.*Not printed.*
- 42d.** Return to an order of the House of Commons, dated 17th December, 1909, for a copy of all certificates, recommendations, letters, memoranda and documents in connection with the promotion of Mr. McIntosh on the 16th of November, 1908, from the position of Division Engineer, Division No. 6, District F, to the position of Assistant District Engineer, District F, and the increase of his salary from \$200 to \$275 per month; also of all complaints against the professional conduct or efficiency of Mr. McIntosh made to the Transcontinental Railway or the Railway Department before the date of promotion. Presented 24th January, 1910.—Mr. Lennor.*Not printed.*
- 42e.** Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all correspondence between the following legal firms: Rothwell & Johnson, Rothwell, Johnson & Bergeman, and Rothwell, Johnson & Stubbs, on the one side, and the Government or the Transcontinental Railway Commissioners, on the other side, as to the instructions to the solicitors for legal services rendered in passing titles of property

CONTENTS OF VOLUME 19—*Continued.*

acquired by the Government, and in respect to the bill of cost and charges of the said several firms; and all papers, documents, letters, telegrams and correspondence having any reference to the items of charges of said firms appearing on page W—370 of the Auditor General's Report of 1909, amounting in the whole to \$1,376.60. Presented 24th January, 1910.—*Mr. Meighen*.*Not printed.*

- 42f.** Return to an order of the House of Commons, dated 17th December, 1909: 1. Showing the names and addresses of the engineers who surveyed and located the line of the Eastern Division of the Transcontinental Railway, and the part of the railway covered by the work of each engineer. 2. The name and address of the engineer who prepared the estimates of quantities and prices of the section or portion of the line covered by each contract. 3. The names of the engineers acting upon behalf of the Railway Department, or Railway Commission, and the Grand Trunk Pacific Railway Company, in determining upon the form and wording of the specifications, as provided for by the seventh section of the agreement between the government and the company. 4. The names of such of the engineers acting in any of the capacities aforesaid, as subsequently acted in connection with construction, when and for how long, in what capacity, where their services have been dispensed with, and for what cause. 5. The names and addresses of all the engineers in the service of the Railway Commission, or Railway Department, on Districts B and F of the said Eastern Division, since the commencement of the construction of the railway, the capacity in which each was employed, the salary in each case, the promotions, increases of salary, retirements and dismissals which have taken place, the cause for promotion, dismissal or retirement in each case, and a copy of all complaints lodged with the commissioners or their chief engineer or the department, against any of these engineers. 6. The names of the engineers now in charge of or engaged upon District B and F, and the official position and salary of each. Presented 3rd February, 1910.—*Mr. Lennox*.*Not printed.*
- 42g.** Interim Report of the Commissioners of the Transcontinental Railway, being for the nine months ended 31st December, 1909, setting forth the receipts and expenditure in connection with the Eastern Division of the National Transcontinental Railway, and such other matters in relation to the said railway as appear to be of public interest. Presented 4th February, 1910, by Hon. G. P. Graham.*Not printed.*
- 42h.** Return to an order of the House of Commons, dated 7th February, 1910, showing all written objection to classification upon the Transcontinental Railway made since July 28th, 1908, and in reference to overbreak or other over expenditure since 2nd October, 1908. Presented 17th February, 1910.—*Mr. Lennox*.*Not printed.*
- 42i.** Return to an order of the House of Commons, dated 24th January, 1910, showing: (a) The names of the contractors for the construction of the National Transcontinental Railway and the number, mileage and location of the contract; (b) the estimated expenditure under each contract at the time the contract was let, based upon the engineer's estimate of quantities, at dates of the accepted tender; (c) the estimated increase or decrease in expenditure in each case occasioned by change in location, specification, construction, material, grade or other change subsequent to the letting of the contract; (d) the amount returned and claimed on progress estimates under each contract to date, the amount actually paid under each contract, and the estimated amount yet required to complete the work in each case; (e) the engineer's estimated quantity of solid rock, loose rock and common excavation in the section of line covered by each contract, the estimated cost under these headings, based upon the rates of the accepted tender, the actual expenditure under these headings to date, as shown by progress estimates, the amounts actually paid to date under these headings, and the

CONTENTS OF VOLUME 19—Continued.

estimated quantities of work yet to be done, and the estimated sums yet to be paid under these headings in respect of each contract. Also as to all contracts other than the twenty-one covered by the Return brought down on the 26th of April, 1909, No. 46h: a copy of (a) engineer's itemized estimate of quantities as to each contract of each class of work and material, as set out in the schedules and itemized, and total estimated expenditure based upon rates of accepted tender, and (d) a copy of all tenders received; (c) itemized quantities of work and material under the various headings actually done or furnished to date, and itemized, and total expenditure therefor; itemized statement of estimated quantities of work yet to be done and material, &c., yet to be furnished and itemized, and total estimated cost of the same based on contract prices. Presented 17th February, 1910.—*Mr. Lennor.*

Not printed.

- 42j. Return to an address of the House of Commons, dated 14th February, 1910, for a copy of all correspondence, submissions, references, reports, returns and orders in council, in reference to the adjustment of the disputed item of 581 cubic yards of excavation, claimed at 10 instead of \$2.50 a cubic yard, referred to in a letter of the Auditor General to the Secretary of the Transcontinental Commission, dated the 18th August, 1909. Presented 21th February, 1910.—*Mr. Lennor.**Not printed.*
43. Report of Robert M. Coulter, Deputy Postmaster General, on his mission to Australia and New Zealand to discuss with the governments of those countries the possibility of taking steps that would lead to the inauguration of a steamship service between England, Australia and New Zealand, via Canada, on the Atlantic and Pacific oceans. Presented 22nd November, 1909, by Sir Wilfrid Laurier.*Printed for sessional papers.*
44. Return to an order of the House of Commons, dated 16th November, 1909, for a copy of all correspondence, documents and papers of every description not already brought down touching the recent treaty with the French Republic, or any modification therein. Presented 24th November, 1909.—*Mr. Borden.**Not printed.*
45. Minutes of proceedings of the Board of Internal Economy of the House of Commons for the past year, pursuant to Rule of the House No. 9. Presented 24th November, 1909, by the Hon. The Speaker.*Not printed.*
46. Detailed statement of all bonds or securities registered in the Department of the Secretary of State of Canada, since last return (2nd February, 1909), submitted to the parliament of Canada under section 32 of chapter 19, of the Revised Statutes of Canada, 1906. Presented 25th November, 1909, by Hon. C. Murphy.*Not printed.*
47. Return under chapter 125 (R.S.C.), 1906, intituled: 'An Act respecting Trade Unions,' submitted to parliament in accordance with section 33 of the said Act. Presented 25th November, 1909, by Hon. C. Murphy.*Not printed.*
48. Return of orders in council passed between the 1st of December, 1908 and the 31st October, 1909, in accordance with the provisions of section 5 of the Dominion Land Survey Act, chapter 21, 7-8 Edward VII. Presented 29th November, 1909, by Hon. F. Oliver.*Not printed.*
49. Return of orders in council which have been published in the *Canada Gazette* and in the *British Columbia Gazette*, between 1st December, 1908, and 31st October, 1909, in accordance with provisions of subsection (d) of section 38 of the regulations for the survey, administration, disposal and management of Dominion lands within the 40-mile railway belt in the province of British Columbia. Presented 29th November, 1909, by Hon. F. Oliver.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

50. Return of orders in council passed between the 1st December, 1908, and the 31st October, 1909, in accordance with the provisions of the Forest Reserve Act, sections 7 and 13 of chapter 56, Revised Statutes of Canada. Presented 29th November, 1909, by Hon. F. Oliver. *Not printed.*
51. Return of orders in council passed between the 1st December, 1908, and the 31st October, 1909, in accordance with the provisions of the Rocky Mountain Park Act, section 5 of chapter 60, Revised Statutes of Canada. Presented 29th November, 1909, by Hon. F. Oliver. *Not printed.*
52. Return of orders in Council which have been published in the *Canada Gazette*, between 1st December, 1908, and 31st October, 1909, in accordance with the provisions of section 77 of the Dominion Lands Act, chapter 20 of the Statutes of Canada, 1908. Presented 29th November, 1909, by Hon. F. Oliver. *Not printed.*
53. Return to an order of the House of Commons, dated 18th November, 1909, for a copy of all correspondence and papers respecting the application by the United States immigration service to the Minister of the Interior, for the deportation of one Mrs. Goby, an alleged immigrant, to the United States of America from Canada, entering at the port of Sault Ste. Marie, Michigan, together with a copy of all orders, decisions, reports and returns regarding any action taken thereupon by the Department of the Interior. Presented 1st December, 1909.—*Mr. Boyce*. *Not printed.*
54. General orders issued to the Militia between the 1st February, 1909, and the 1st November, 1909, inclusive. Presented 1st December, 1909, by Sir Frederick Borden. *Not printed.*
55. Report of the Ottawa Improvement Commission for the fiscal year ended 31st March, 1909. Presented 3rd December, 1909, by Hon. W. S. Fielding. *Printed for sessional papers.*
56. Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 12th May, 1909, on the subject of a despatch from the Right Honourable the Principal Secretary for the Colonies, transmitting an invitation from the Honorary Secretary of the 12th International Congress on Alcoholism to the Government of Canada, to appoint delegates to attend the congress in question. Presented 6th December, 1909, by Sir Wilfrid Laurier. *Not printed.*
57. Return to an order of the House of Commons, dated 22nd November, 1909, for a copy of all memorials, reports, correspondence and documents in the possession of the government not already brought down, relating to a survey of a route for a tunnel under the Straits of Northumberland between the province of Prince Edward Island and the mainland of Canada, and also relating to the construction of such tunnel. Presented 6th December, 1909.—*Mr. Warburton*. *Not printed.*
58. Return (in so far as the Department of the Interior is concerned) of copies of all orders in council, plans, papers, and correspondence which are required to be presented to the House of Commons, under a resolution passed on 20th February, 1882, since the date of the last return, under such resolution. Presented 7th December, 1909, by Hon. F. Oliver. *Not printed.*
- 58a. Return of lands sold by the Canadian Pacific Railway during the year ended on the 31st October, 1909. Presented 18th January, 1910, by Hon. F. Oliver. *Not printed.*
59. Return to an address of the House of Commons, dated 16th November, 1909, for a copy of all orders in council at present in force with reference to immigration; also a copy of all regulations in force at the present time in connection with immigration in Canada. Presented 9th December, 1909.—*Mr. Wilson (Lennox)*. *Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

60. Return to an order of the House of Commons, dated 22nd November, 1909, showing:—
 1. The application made to the Railway Board for protection of railway crossings under the provisions of chapter 32 of the Statutes of 1909, an Act to amend the Railway Act, and (a) the cases in which these applications have been granted, (b) in which they have been refused, when refused, and the reason for refusal. 2. The names of the persons in each case making the application. 3. The cases in which the board of its own motion made an order for the protection of crossing under said act. 4. The appropriation made by the board out of the Railway Grade Crossing Fund under said act, and the crossing in respect of which such appropriations were made. 5. The character or description of the crossing in question, and the character, description and cost in each case of the construction work of protection ordered or directed by the board. 6. The amount in each case ordered or directed by the board to be paid out of the said fund and by the railway company and municipality or other party to the proceedings. 7. The cases in which the work ordered to be done (a) has been completed, (b) in which it is under construction, (c) the cases in which the municipality has submitted to or complied with the order of the board, and (d) cases in which the municipality has refused to comply. Presented 14th December, 1909.—*Mr. Lennox.*
Not printed.
61. Return to an order of the House of Commons, dated 24th November, 1909, showing what Indian lands within the territories now covered by each of the provinces of Manitoba, Saskatchewan and Alberta, have been sold yearly since 30th June, 1900; such information to be detailed as follows: the name of each reserve, the area sold therein yearly, the average prices realized, and the cash paid to the Indians concerned at the time of sale, under the terms of surrender. Presented 15th December, 1909.—*Mr. McGrath.*
Not printed.
62. Return to an order of the House of Commons, dated 22nd November, 1909, showing the areas sold or leased as oil lands in the Northwest, giving the amount sold or leased, the date when, and the parties to whom sold or leased, and if leased, the various assignments, if any, made thereof, and the dates of the same. Presented 15th December, 1909.—*Mr. Foster.**Not printed.*
63. Return to an order of the House of Commons, dated 16th November, 1909, showing: Copy of the contract for the dredging of the Napanee river during the summer of 1909; name of the contractor who had the contract; names of the engineers in charge of the work and the inspector; the depth and width of the channel after dredging; the length of time taken to complete the work; the total amount of money expended on the work; whether the work was done by day work or by the yard; and the prices paid by day or by yard. Presented 15th December, 1909.—*Mr. Wilson (Lennox).*
Not printed.
64. Return made to parliament in accordance with chapter 47, section 4, Revised Statutes, 1906, containing copy of the orders in council for the issue of licenses to United States fishing vessels to enable them to buy bait, ice, lines, &c. during the year 1910. Presented 16th December, 1909, by Hon. L. P. Brodeur.*Not printed.*
65. Return, in pursuance of section 16 of the Government Annuities Act, 1908, containing statement of the business done during the fiscal year ending March 31st, 1909, together with a copy of the regulations made under section 13 of the act. Presented 17th December, 1909, by Hon. W. S. Fielding.*Printed for sessional papers.*
66. Report of the Commissioner, Dominion Police Force, for the year 1909. Presented 12th January, 1910, by Hon. A. B. Aylesworth.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

67. Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all reports and correspondence in connection with section 29, township 9, range 22, west of the 4th meridian, as well as applications for railway right of way and station grounds within such land. Presented 12th January, 1910.—*Mr. McGrath..Not printed.*
68. Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all papers, reports, correspondence, &c., between the Department of the Interior and its officers and agencies and any other persons, relative to the s.w. $\frac{1}{4}$ section 24-38-10 w. 3rd m., and the respective claims of Allan R. Mudie and Thos. G. Warwick. Presented 12th January, 1910.—*Mr. Lake.. . . .Not printed.*
69. Return to an order of the House of Commons, dated 15th December, 1909, showing the names of the two hundred and twenty-one members of the House of Commons, as provided for in 6-7 Edward VII., Dominion Statutes, 1907, chapter 41, section 1, excepting only such seat or seats as have fallen vacant. Presented 12th January, 1910.—*Mr. White (Renfrew).. . . .Not printed.*
70. Return to an order of the House of Commons, dated 24th November, 1909, showing the total number of incubators and brooders, respectively, imported into Canada from the United States during the fiscal year ending March 31st, 1909, and the total cost of each. Presented 13th January, 1910.—*Mr. White (Renfrew).. . . .Not printed.*
71. Return to an order of the House of Commons, dated 22nd November, 1909, for a copy of all letters, telegrams, applications, contracts and correspondence with regard to the taking of spawn for the fish hatchery at Snake Island, Winnipegosis, for the years 1907, 1908 and 1909. Presented 13th January, 1910.—*Mr. Campbell.. . . .Not printed.*
72. Return to an order of the House of Commons, dated 15th December, 1909, showing a list of all exports, technical advisers, and special officers generally, engaged by the government in connection with the naval defence programme and its execution, giving names, special qualifications, duration of engagement and rate of remuneration, as well as the total amount expended to date under the above; also amounts expended to date for articles, books, instruments and objects of all kinds in connection with said naval defence programme. Presented 13th January, 1910.—*Mr. Monk.*
Printed for sessional papers.
73. Return to an order of the House of Commons, dated 29th November, 1909, showing the number of lighthouses in British Columbia, the salaries of the lightkeepers at the end of the financial year 1907-1908; what the salaries are to-day; why some salaries have been reduced and when such reduction took place. Presented 13th January, 1910.—*Mr. Smith (Nanaimo).. . . .Not printed.*
74. Return to an address of the House of Commons, dated 18th November, 1909, for a copy of all orders in council, correspondence, documents and papers of every description relating to the proposed sale or disposal of any part of the Peigan Indian Reserve in the province of Alberta, including any advertisement of such sale and record of the proceedings, whether by vote or otherwise, under which any of the Indians on said reserve purported to give their consent thereto. Also a return showing the actual number of Indians on said reserve entitled to vote or elect in respect of such proposed sale, and all other information in the possession of the department or its officials relating to or in any way referring to the proceedings in connection with such proposed sale. Presented 13th January, 1910.—*Mr. Herron.. . . .Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 75.** Return to an order of the House of Commons, dated 17th December, 1909, for a copy of all papers, reports, correspondence, &c., between the Department of the Interior, and its officers and agencies, and any other person, relative to the s.w. $\frac{1}{4}$ section 16-30 9, w. 3rd m., and the respective claims thereto of Thomas Paterson and J. F. Sibbald. Presented 13th January, 1910.—*Mr. Lake*. *Not printed.*
- 76.** Return to an order of the House of Commons, dated 24th November, 1909, showing approximately the amount of revenue collected by the government between the 1st January, 1908, and the 1st November, 1909, in the province of Alberta and Saskatchewan, respectively, on account of payments for coal lands, coal royalties, bonuses and rental on timber lands, timber dues, hay lands, grazing lands, irrigation areas, school lands, minerals, water powers, stone quarrying lands, Indian lands, or on account of any natural resources within each of the above provinces. Presented 13th January, 1910.—*Mr. McCarthy*. *Not printed.*
- 77.** Return to an order of the House of Commons, dated 17th December, 1909, for a copy of all documents and papers relating to the western shipment of grain. Presented 13th January, 1910.—*Mr. Taylor (Lcads)*. *Not printed.*
- 78.** Return to an order of the House of Commons, dated 24th November, 1909, for a copy of all letters, correspondence and complaints, or other papers, from Indians or others regarding the manner in which the St. Peter's Indians have been treated relating to lands allotted to them by the government in consideration of the surrender of St. Peter's Reserve. Presented 13th January, 1910.—*Mr. Bradbury*. *Not printed.*
- 78a.** Return to an order of the House of Commons, dated 13th December, 1909, for a copy of all instructions to J. O. Lewis, Indian Agent at Selkirk, regarding the delivery of patents to Indians entitled to same, in connection with the surrender of St. Peter's Reserve. Presented 13th January, 1910.—*Mr. Bradbury*. *Not printed.*
- 78b.** Return to an order of the House of Commons, dated 6th December, 1909, showing all moneys paid by the government in connection with the surrender of St. Peter's Reserve, to whom paid, and for what; also all moneys paid in connection with the moving of the Indians to the new reserve on Lake Winnipeg, to whom paid, and for what. Presented 13th January, 1910.—*Mr. Bradbury*. *Not printed.*
- 78c.** Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all instructions sent to the Indian Agent at Selkirk, in connection with St. Peter's Indians pledging or disposing of their holdings, secured through the surrender of their reserve; a statement showing all those entitled to receive patents for lands in connection with the surrender of the reserve, the applications made by those so entitled for their patents, and receipts signed for the patents by those so entitled on delivery of the patent. Presented 13th January, 1910.—*Mr. Bradbury*. *Not printed.*
- 78d.** Copy of papers relating to St. Peter's Indian Reserve, comprising letters of instructions and commission to Mr. H. M. Howell, Report of H. M. Howell, and advertisement in connection with auction sale of lands. Presented 27th January, 1910, by Hon. F. Oliver. *Not printed.*
- 78e.** Return to an order of the House of Commons, dated 17th January, 1910, for a copy of all accounts of George Tracy, of Selkirk, against Indians of St. Peter's Reserve, Manitoba, now on file in the Department of Indian Affairs here, and of all correspondence in the department in relation thereto. Presented 31st January, 1910.—*Mr. Bradbury*. *Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 78f.** Return to an order of the House of Commons, dated 14th February, 1910, for a copy of all papers and instructions given to A. S. Williams, Law Clerk of the Department of Indian Affairs, and to S. Swinford, Inspector of Indians, Winnipeg, in connection with their work among the St. Peter's Indians in Manitoba; also a copy of the report of these gentlemen in connection with the work they have been engaged in during the last few weeks among the St. Peter's Indians. Presented 4th April, 1910.—*Mr. Bradbury.*
Not printed.
- 79.** Return to an order of the Senate, dated 26th November, 1909, for a copy of the several complaints which in 1908 and 1909 have been made by different parties to the Minister of the Interior or to the Superintendent of Immigration of the manner in which immigrants are treated at Quebec. Presented 13th January, 1910.—*Hon. Mr. Landry.*
Not printed.
- 80.** Return to an order of the Senate, dated 2nd December, 1909, for a copy of all accounts filed during the fiscal year 1907-8 in the Department of the Interior by Sosthène Morisset, one of the clerks of the Immigration office at Quebec. Presented 13th January, 1910.—*Hon. Mr. Landry.**Not printed.*
- 80a.** Return to an order of the Senate, dated 3rd December, 1909, for a copy (1) of the medical certificate given by Doctors Pagé and Nadeau to justify the order for the sending back of the immigrant Otta Nittinen, in November, 1908; (2) of the correspondence on this subject exchanged between the agent of the Canadian Pacific Railway, Mr. Jules Hone, and Messrs. Lavoie and Stein of the Immigration Office at Quebec, and the Superintendent General of Immigration at Ottawa, Mr. W. D. Scott, in November and December, 1908. Presented 13th January, 1910.—*Hon. Mr. Landry.*
Not printed.
- 80b.** Return to an order of the Senate, dated 3rd December, 1909, for a copy of the attendance and pay-lists of the employees in the Immigration Office at Quebec, for the first four months of the present year. Presented 13th January, 1910.—*Hon. Mr. Landry.*
Not printed.
- 80c.** Return to an order of the Senate, dated 2nd December, 1909, for the Report of Detentions and Deportations at the port of Quebec for the month of November, 1908. Presented 13th January, 1910.—*Hon. Mr. Landry.**Not printed.*
- 80d.** Return to an address of the Senate, dated 25th January, 1910, for a copy of the attendance and pay-lists of the employees of the Immigration Office at Quebec, for the months of January, February, March and April of 1909. Presented 10th February, 1910.—*Hon. Mr. Landry.**Not printed.*
- 80e.** Return to an order of the Senate, dated 12th January, 1910, for a copy of the report made in 1906 to the Department of the Interior by Mr. Blair, upon the inquiry held by him at Quebec, at the Immigration Office, on the subject of certain complaints concerning the administration of the said office. Presented 22nd February, 1910.—*Hon. Mr. Landry.**Not printed.*
- 80f.** Return to an order of the House of Commons, dated 13th December, 1909, for a copy of the correspondence exchanged since the 1st of January, 1908, between the medical examiners of immigrants and the Superintendent of Immigration, respecting the inspection of immigrants. Presented 23rd March, 1910.—*Mr. Paquet.**Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 80g.** Return to an order of the Senate, dated 10th March, 1910, for the production of all complaints made to the Department of the Interior against the present Immigration Agent at Quebec, and of all the correspondence exchanged on this subject between the different parties in question and the department or any of its officers. Presented 6th April, 1910.—*Hon. Mr. Landry*. *Not printed.*
- 80h.** Return to an order of the Senate, dated 2nd March, 1910, calling for the production of all correspondence between the present Immigration Agent at Quebec and his superior in the Department of the Interior, on the subject of his retirement, dismissal or promotion of officers under his control, or of the increase or decrease of their salaries or remuneration. Presented 6th April, 1910.—*Hon. Mr. Landry*. *Not printed.*
- 80i.** Return to an order of the Senate, dated 1st February, 1910, for a copy of the accounts sent by the restaurant keeper, Jacques Dery, to the Immigration Department, for meals furnished the employees of the Immigration Office at Quebec, from 1st January, 1906, until 1st January, 1910, specifying separately for each employee, the date of each meal and the sum asked, and also a copy of all the accounts sent, from time to time, by the same restaurant keeper during the same period, for meals given and provisions furnished in connection with the Immigration Office at Quebec. Presented 6th April, 1910.—*Hon. Mr. Landry*. *Not printed.*
- 80j.** Return to an order of the Senate, dated 10th March, 1910, for a copy of all correspondence exchanged between the Immigration Department and Doctor Jos. P. Lavoie, Immigration Agent at Quebec, since the appointment of the latter, with regard to the following subjects, to wit: The expense of equipping his office; the placing of the telephone, the cost and the use of that instrument; the installing of electric fans in the immigrants' eating room, and in the agent's dining room; the changes to be made in the personnel of the Quebec office; the appointment of new employees; and every subject concerning the internal administration of his office. Presented 13th April, 1910.—*Hon. Mr. Landry*. *Not printed.*
- 80k.** Return to an order of the Senate, dated 7th April, 1910, for the production of the requests or of the complaints made by the navigation companies for the past five years, on the subject of the insufficiency of the means of accommodation put at the disposal of the authorities of Grosse Isle for the benefit of the immigrants, obliged by the regulations to remain there. Presented 2nd May, 1910.—*Hon. Mr. Landry*. . . *Not printed.*
- 80l.** Return to an order of the Senate, dated 26th April, 1910, calling for the production of a copy of the attendance list of the employees of the Immigration Office at Quebec for the month of October, 1908. Presented 4th May, 1910.—*Hon. Mr. Landry*. *Not printed.*
- 80m.** Return to an order of the Senate, dated 7th April, 1910, calling for the production of a copy of the attendance lists of the employees of the Immigration Office at Quebec, from the 1st April, 1909, to this day, and also for a copy of the pay-lists of the same employees during the same period. Presented 4th May, 1910.—*Hon. Mr. Landry*.
Not printed.
- 81.** Return to an order of the House of Commons, dated 16th November, 1909, showing in relation to each dog-fish reduction plant or establishment for the reduction of dog-fish erected by or for the government or maintained in whole or in part by the government, (a) the cost of construction, (b) the cost of maintenance for each year, (c) the location, (d) the quantity of dog-fish treated thereat in each year, and (e) the amount realized from the sale of or the disposal in each year. Presented 17th January, 1910.—*Mr. Borden*.
Not printed.

CONTENTS OF VOLUME 19—*Continued.*

82. Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all correspondence, reports, documents and papers touching the matter of the salmon fishery of Salmon River, Digby county, N.S., and the fishways or passes in said river. Presented 17th January, 1910.—*Mr. Jameson*... ..*Not printed.*
83. Return to an order of the House of Commons, dated 22nd November, 1909, for a copy of all reports, correspondence and other papers relating to the condition and maintenance of the buoy on the Old Proprietor Ledge in the Bay of Fundy since January 1st, 1908; also of all reports, correspondence and other papers relating to the establishment, equipment, maintenance and operation of the life boat and life saving station at Seal Cove, in the Bay of Fundy; also copy of all instructions issued to Captain Lugar in connection with the inquiry into the wreck of the ss. *Hestia*, and of the findings and report on said inquiry. Presented 17th January, 1910.—*Mr. Daniel*... ..*Not printed.*
- 83a. Supplementary Return to No. 83. Presented 14th February, 1910... ..*Not printed.*
84. Return to an order of the House of Commons, dated 15th December, 1909, showing:
 1. The present indebtedness to the Dominion government of the Montreal Turnpike Trust (a) on capital account, (b) for arrears of interest. 2. The amount collected at each toll gate belonging to the said turnpike trust during the year ending 31st December, 1908, and for the first six months of the year 1909. 3. The names of all parties who have commuted their tolls during each of the two above mentioned periods and the amount of the commutation money paid to the trust in each case. 4. The amount expended on each section or road division under the control of said trust, during the year ending 31st December 1908, and the contracts given out during the said year, with the name of the contractor and the date and amount of money involved in each case; and a statement in each case also as to whether the contract was awarded after tender called through newspapers. 5. The amount paid out during the said two first above-mentioned periods at each toll gate for salaries of day and night guardians and any other expenditures at each of the toll gates maintained. 6. The names of all parties holding passes for free use of the roads under control of said trust during the period above mentioned, with a statement, in each case, of the reason why the pass was so granted. 7. The expenses of the said trust during each of the two periods above mentioned for rent, salaries of the office, inside or outside service, giving name and remuneration of each official and amounts paid to any civil engineer employed by the trust. 8. The actual present indebtedness in detail of said trust outside of its bonds due to the government of Canada. 9. The amounts collected by said trust during the above-mentioned periods from municipalities under special agreements made as to their share pro rata of the bonded indebtedness of the turnpike trust. 10. The names of all members of the trust elected to represent the bondholders, with date of election in each case, during said two periods. 11. The amounts paid by the trust to any of its members or officials during said two periods, whether as travelling or personal expenses, or indemnity for attendance or for any other reason whatever. 12. The name of any auditor who has acted during said two periods, and the amount paid such auditor. 13. An exact statement of any amounts paid by the trust for purchase or lease of any property outside of the city of Montreal and in defraying the travelling or displacement or maintenance expenses of the trustees or their officials generally. Presented 17th January, 1910.—*Mr. Monk*... ..*Not printed.*
85. Return to an address of the House of Commons, dated 29th November, 1909, for a copy of all orders in council relating to the North Atlantic Trading Company, and all correspondence between the North Atlantic Trading Company and the government, or any member or official thereof, since November 1, 1906, and up to 20th November, 1909. Presented 20th January, 1910.—*Mr. Wilson (Lennox)*... ..*Not printed.*

 CONTENTS OF VOLUME 19—*Continued.*

- 85a.** Return to an order of the House of Commons, dated 15th December, 1909, for a copy of petition of right of pleas offered in defence in the case of the suit of the North Atlantic Trading Company vs. the King, in the Exchequer Court, and of all correspondence as well as reports and petitions which led up to the government granting a fiat to the suppliant; and a copy of all letters having reference to the said claim now sued upon from the time of the final payment to the said North Atlantic Company. Presented 20th January, 1910.—*Mr. Monk*.*Not printed.*
- 86.** Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all correspondence, documents, and reports since the 1st January, 1908, between our immigration agents in Belgium and the Minister of the Interior. Presented 24th January, 1910.—*Mr. Paquet*.*Not printed.*
- 86a.** Return to an order of the House of Commons, dated 18th November, 1909, giving the names and addresses of all immigration agents at the present time employed by the government in Great Britain, the continent of Europe, and the United States, on salary, the amount of salary paid to each, the amount of other perquisites paid to each, if any; the names and addresses of all immigration agents at the present time employed by the government in the above countries on commission, the amount of such commission, the rate of commission per immigrant, the amount of other perquisites paid to each; the names and addresses of all special immigration agents in the above countries appointed during the fiscal years 1908-9 and up to 1st November, 1909, the date of the appointment of each, the address of each at the time of his appointment, the amount of salary, commission, or other perquisites paid to each, and the length of time served by each in respect of such appointment. Presented 4th February, 1910.—*Mr. Wilson (Lennox)*.*Not printed.*
- 87.** Return to an order of the House of Commons, dated 1st December, 1909, showing all casualties and accidents attended with danger or loss of human life, that have occurred in the Marine and Fisheries Department owing to the operation of pintsch and acetylene gas as an illuminant, for each year since 1880, together with a copy of all papers and reports in connection therewith. Presented 20th January, 1910.—*Mr. Foster*.*Not printed.*
- 88.** Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all correspondence, petitions, and other papers between any person or persons and the government, or any member thereof, or any official thereof, with reference to the dredging of the Napanee river. Presented 20th January, 1910.—*Mr. Wilson (Lennox)*.*Not printed.*
- 89.** Return to an order of the House of Commons, dated 13th December, 1909, for a copy of all correspondence had between the Post Office and Public Works Departments, together with all reports and other documents relating to the necessity of providing adequate post office accommodation in the city of Lethbridge. Presented 20th January, 1910.—*Mr. Magrath*.*Not printed.*
- 89a.** Supplementary Return to No. 89. Presented 18th February, 1910.*Not printed.*
- 90.** Interim Report of the Dominion Fisheries Commission for the investigation of the waters on Lac du Bonnet fisheries. Presented 20th January, 1910, by Sir Wilfrid Laurier.*Not printed.*
- 90a.** Interim Report of the Dominion Fisheries Commission for the investigation of the waters of Manitoba and the West. Presented 20th January, 1910, by Sir Wilfrid Laurier.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 90b.** Return to an order of the House of Commons, dated 22nd November, 1909, for a copy of all letters, telegrams, applications, contracts, lease or leases and correspondence with regard to Lac du Bonnet fishing. Presented 27th January, 1910.—*Mr. Campbell.*
Not printed.
- 90c.** Return to an address of the House of Commons, dated 4th February, 1909, for a copy of all correspondence, orders in council, papers and documents relating to the question of fisheries in the Pembina river, in the province of Manitoba, and of regulations or agreements with the United States government in reference to the rivers running from one country into the other. Presented 14th February, 1910.—*Mr. Sharpe (Lisgar).*
Not printed.
- 91.** Return to an order of the House of Commons, dated 15th December, 1909, for a copy of the pay sheets of the employees on the Lachine canal under the supervision of Denis O'Brien for the months of May, June, July, August, September, October and November. Presented 24th January, 1910.—*Mr. Verville.**Not printed.*
- 92.** Return to an order of the House of Commons, dated 24th January, 1910, for a copy of all instructions given during his term of office by the Honourable Speaker Blanchet, to the then sergeant-at-arms, or to other officials in connection with the appointment of sessional messengers. Presented 26th January, 1910.—*Mr. Monk.**Not printed.*
- 93.** Return to an order of the House of Commons, dated 18th November, 1909, showing the number of fatal accidents resulting from the use of explosives in the construction of railways and other public works in Canada, reported to either the Department of Railways and Canals, the Department of Public Works, or the National Transcontinental Railway Commissioners, within the past three years; the nature of investigation, if held, after each accident; and what precautions have been taken to prevent or minimize the number of accidents from the use of explosives on construction work in Canada under control of government officials. Presented 26th January, 1910.—*Mr. Robb.**Printed for sessional papers.*
- 94.** Return to an order of the House of Commons, dated 18th November, 1909, for a copy of all applications, petitions, letters, telegrams, documents, plans, specifications and correspondence with reference to, and in any way concerning the application for subsidy for the building of a dry-dock and ship-building yard by certain persons, or company, at or in the vicinity of the town of Sault Ste-Marie, Ontario. Presented 26th January, 1910.—*Mr. Boyce.**Not printed.*
- 94a.** Return to an order of the House of Commons, dated 18th November, 1909, for a copy of all applications, petitions, letters, telegrams, documents, plans, specifications and correspondence with reference to and in any way concerning the application for subsidy for the building of a dry-dock and ship-building yard by certain persons, or company, at or in the vicinity of the town of Port Arthur, Ontario. Presented 11th March, 1910.—*Mr. Boyce.**Not printed.*
- 95.** Return to an order of the House of Commons, dated 17th December, 1909, showing:
1. A description by sections, townships and ranges, with areas of all lands included in the area controlled by the Southern Alberta Land Company under agreements with the government, and the date of expiry of such agreements. 2. A description by sections, townships and ranges with areas of all lands held under grazing lease or leases or assignment of leases and now controlled by Messrs. Cowdry & Maunsall, or either of them, of lands which lie between the Bow and Belly rivers, bounded on the east by range 12 and on the west by range 19, west of the fourth meridian. Presented 27th January, 1910.—*Mr. McCarthy.**Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

96. Return to an order of the House of Commons, dated 17th January, 1910, showing:
1. What amount has been annually expended by the government since the year 1900 in connection with the Atlantic Fisheries of Canada, apart from sums spent in the fishery protection service and for bounty, in the respective provinces of Nova Scotia, New Brunswick, Prince Edward Island and Quebec. 2. The amount expended in each of the said provinces annually for fishery breeding purposes, dog-fish reduction plants, bait freezers, cold storage and salaries of officials, respectively. 3. What other general purposes in connection with the fisheries expenditures were made in such provinces within said period. Presented 27th January, 1910.—*Mr. Jameson*.*Not printed.*
97. Regulations of the National Parks of Canada. Presented 28th January, 1910, by Hon. F. Oliver.*Printed for sessional papers.*
98. Return to an order of the House of Commons, dated 19th January, 1910, showing all tenders called for by the Department of Railways and Canals, or the purchasing agent of the Intercolonial Railway of Ottawa, at any time during the year 1909, for wire fencing; a copy of any tenders received for such fencing, with the names of the tenderers, and the prices quoted by the said parties tendering for the different kinds of fencing; the names of the successful tenderers, and the particular kind of fencing bought, the gauge of wire, number of stands and distances apart of the brackets in uprights; the price per rod, and where the wire was manufactured. Presented 1st February, 1910.—*Mr. Wilcox*.*Not printed.*
- 98a. Return (in part) to an order of the House of Commons, dated 1st December, 1909, for a copy of all papers in connection with the alleged securing and sale or distribution of passes on the Intercolonial Railway within the last two years, and also of all papers of every kind in connection with the alleged padding of pay-lists on the Windsor Branch Railway, and the re-sale of mutilated railway ties to the government. Presented 16th February, 1910.—*Mr. Foster*.*Not printed.*
- 98b. Return to an order of the House of Commons, dated 24th January, 1910, showing:
1. How many derailments have taken place on the Intercolonial Railway during the year 1909. 2. At what points of the railway each of these derailments took place, and at what dates. 3. The report made in each case, and the cause or causes mentioned in such report. Presented 17th February, 1910.—*Mr. Talbot*.*Not printed.*
- 98c. Return to an order of the House of Commons, dated 7th February, 1910, showing:
Since the beginning of the autumn train service of 1909 on the Intercolonial Railway, at what time the train leaves Oxford Junction every week day morning for Pictou is due to leave Oxford Junction and arrive at Pictou; the actual time at which the train departed each day from Oxford Junction, the actual time at which it arrived each day at Pictou; the causes of the delay, if any; and what efforts are being made to improve the service in respect of time. Presented 24th February, 1910.—*Mr. Rhodes*.*Not printed.*
- 98d. Return to an order of the Senate dated 15th February, 1910, for a statement showing in so many distinct columns: 1. The names of all the employees of the Intercolonial Railway who have been dismissed or who have resigned since the Intercolonial Railway was put under the direction of the Commission of that road. 2. The respective salaries of such employees. 3. The date of their appointment. 4. The date of their dismissal. 5. The number of the division or of the section of the railway where they were employed. 6. The domicile of such employees at the time of their dismissal. Presented 19th April, 1910.—*Hon. Mr. Landry*.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 98e.** Return to an order of the House of Commons, dated 14th March, 1910, showing: Since the appointment of the Government Railways' Managing Board, how many employees of the Intercolonial Railway have been dismissed at Truro, at Halifax, and at Stellarton, respectively, with their respective names; at what kind of work each was employed; on what dates, respectively, each one was dismissed; how many of them since re-employed; on what dates, respectively, each one was re-employed; how long since such re-employment each one has remained in the service; how many of them are still in the service, with their names and what each one is employed at. Presented 20th April 1910.—*Mr. Rhodes*. *Not printed.*
- 98f.** Return to an order of the House of Commons, dated 22nd November, 1909, showing the number of passes issued on the Intercolonial Railway from October 1st, 1908, to October 1st, 1909, whether annual, return trip or trip, to whom issued, the authority and upon whose recommendation the passes were issued and reasons for the issue, the several points at which these passes took effect and the destination, and also a copy of the agreement entered into by the various railways of Canada regarding the non-issuing of passes. Presented 20th April, 1910.—*Mr. Stanfield*. *Not printed.*
- 99.** Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all letters, communications, petitions and correspondence with and by the government, or any minister, with regard to the appointment of some one to fill the vacancy on the Board of Railway Commissioners, caused by the demise of the late Honourable Thos. Greenway. Presented 1st February, 1910.—*Mr. Campbell*. *Not printed.*
- 100.** Return to an address of the House of Commons, dated 29th November, 1909, for a copy of all memorials, reports, correspondence and documents in the possession of the government, relating to the reduction of the representation in the House of Commons, of the several provinces of Nova Scotia, New Brunswick and Prince Edward Island, and of all correspondence with the governments of these provinces with regard to the restoration to the said provinces of such representation as they respectively had at the time of their becoming provinces of this Dominion. Presented 1st February, 1910.—*Mr. Warburton*. *Printed for sessional papers.*
- 101.** Return to an order of the House of Commons, dated 19th January, 1910, for a copy of all declarations, affidavits and solemn declarations made and sent to the Post Office Department, or to the Honourable the Postmaster General, since the first day of September, 1907, up to the fifteenth day of January, 1910, respecting the franking privilege asked for the *Arthabaska Gazette*, with copies of the lists of pretended subscribers to that newspaper with the said declarations, affidavits and solemn declarations; also a copy of the report of Mr. A. Bolduc, Post Office Inspector, respecting the said *Arthabaska Gazette*. Presented 2nd February, 1910.—*Mr. Lavergne*.
Not printed.
- 102.** Return to an order of the House of Commons, dated 13th December, 1909, showing a list of the free mail delivery routes which have been established in Canada, including the port of departure and the place of arrival, the length of each, the number of houses on each route, and the number of boxes on each route. Presented 3rd February, 1910.—*Mr. Armstrong*. *Printed for sessional papers.*
- 102a.** Return to an order of the House of Commons dated 6th December, 1909, for a copy of all papers, letters, telegrams, documents and correspondence with reference to or in any way concerning the installation of free mail delivery service in the city of Sydney, N.S. Presented 17th February, 1910.—*Mr. Maddin*. *Not printed.*

 CONTENTS OF VOLUME 19—*Continued.*

- 103.** Return to an order of the House of Commons, dated 3rd February, 1910, for a copy of the report of Commander Wm. Wakeham, Special Commissioner and Inspector of Fisheries for the Gulf of St. Lawrence, on the Lobster Industry of the Maritime Provinces and the province of Quebec. Presented 3rd February, 1910, by Sir Wilfrid Laurier. *See Sessional Paper No. 22a.*
- 104.** Return to an order of the House of Commons, dated 17th January, 1910, for a copy of all correspondence, reports, despatches, documents and other papers relating in any way to the claim for a homestead, by the members of the family of Angus Sauve, who was in the African campaign, and who died a short time after his arrival in the country. Presented 4th February, 1910.—*Mr. Boyer.* *Not printed.*
- 104a.** (1909). 1. International Boundary Waters Treaty, signed at Washington, 11th January, 1909. 2. Rider attached by the United States Senate.
Printed for both distribution and sessional papers.
- 105.** Report of a system of uniform and common international regulations for the protection and preservation of the food fishes in international boundary waters of Canada and the United States. Prepared by the International Fisheries Commission pursuant to and under the authority of the Convention of April 11, 1908, between Great Britain and the United States. Presented 4th February, 1910, by Sir Wilfrid Laurier. *Printed for distribution.*
- 106.** Return to an order of the House of Commons, dated 19th January, 1910, for a copy of all papers, letters, telegrams, documents and correspondence, occurring during the first six months of 1908, in connection with suggested amendments to the Northwest Irrigation Act. Presented 7th February, 1910.—*Mr. Magrath.* *Not printed.*
- 107.** Return to an address of the House of Commons, dated 16th November, 1909, for a copy of all petitions addressed to His Excellency the Governor General of Canada, or to the government, or any department thereof; also of all letters, correspondence of all kinds, and all reports had by the government in reference to the navigation, cleaning and deepening of the river known as River des Prairies, following along the northern boundary of the island of Montreal. Presented 7th February, 1910.—*Mr. Monk.*
Not printed.
- 107a.** Report of Mr. G. de G. Languedoc, assistant engineer, in respect of work required to be done along Rivière des Prairies, to give a five-foot channel at low water for navigation. Presented 15th February, 1910, by Hon. W. Pugsley. . . . *Not printed.*
- 108.** Return to an order of the House of Commons, dated 24th January, 1910, showing what interest or control the Canadian Northern Railway Company has in any of the following railway companies: The Ontario and Rainy River Railway Company, the Port Arthur, Duluth & Western Railway Company, the Manitoba & Southeastern Railway Company, the Minnesota & Manitoba Railway Company, the Minnesota & Ontario Bridge Company, the Saskatchewan Northwestern Railway Company, the Qu'Appelle, Long Lake & Saskatchewan Railway Company, the Alberta Midland Railway Company, the Edmonton, Yukon and Pacific Railway Company. 2. What subsidies either in land, money or by way of guarantee of securities have been granted to any of the railway companies mentioned on account of the main or branch lines or both, of the said companies, either by the Dominion government, or the provincial governments of Ontario, Manitoba, Saskatchewan and Alberta, or any municipality through which their lines run. 3. What portion of these subsidies have been earned to date. 4. How many miles west of Edmonton a line of railway is constructed and in operation

CONTENTS OF VOLUME 19—*Continued.*

by the Canadian Northern Railway Company. 5. What work other than location survey work has been done west of this point up to date, how much and of what nature. 6. What portion, if any, will eventually form part of the proposed line to Vancouver. 7. When the location plan of the route of the C.N.R. between Edmonton and Vancouver, by way of the Yellow Head Pass was approved by the Minister of Railways and the Board of Railway Commissioners. 8. What applications, if any, have been made since to change or in any way alter this location plan. 9. To what extent, if any, the government of Manitoba has exercised its right of control of freight rates under section 8 of schedule B of the Act 1 Edward VII, chapter 53. 10. What effect, if any, this section of said act has had in reducing freight rates in the province of Manitoba. Presented 8th February, 1910.—*Mr. Lennox*.*Not printed.*

109. Return for the year ended 31st December, 1909, of permits to take intoxicants into the Northwest Territories, in accordance with the requirements of chapter 62, section 88, of the Revised Statutes of Canada. Presented 8th February, 1910, by Hon. F. Oliver. *Not printed.*

110. Return to an order of the House of Commons, dated 6th December, 1909, showing how many officials of the government, or of the Senate or House of Commons, have residences or living rooms in Ottawa supplied by the Crown, with the estimated yearly value and the rent charged in each case. Presented 14th February, 1910.—*Mr. Blain*. *Not printed.*

110a. Supplementary Return to No. 110. Presented 24th February, 1910... *Not printed.*

111. Return to an order of the Senate, dated 26th January, 1910, showing the total amount of lands set apart for school purposes in Rupert's Land, or what now comprises the provinces of Manitoba, Saskatchewan and Alberta. The amount of said lands sold for school purposes yearly before the formation of the provinces of Saskatchewan and Alberta, and the average price realized per acre for same. The amount sold yearly in all the said provinces up to the year 1910, and the average price realized for same. The total amount of acres of school lands yet remaining unsold in the said provinces. Presented 15th February, 1910.—*Hon. Mr. Davis*.*Not printed.*

112. Return to an order of the House of Commons, dated 6th December, 1909, showing the amount received by the Minister of Finance under the Land Titles Act, section 159, cap. 110, R.S.C., 57 and 58 Vic., cap. 28, sec. 116; how such fund is invested under sec. 160 of the same Act; the amount of interest which has accrued from said fund; and the amount paid for losses arising from bad titles guaranteed by said fund. Presented 22nd February, 1910.—*Mr. Macdonell*.*Not printed.*

113. Return to an order of the House of Commons, dated 17th January, 1910, showing: 1. The name, cost, date of construction, place of construction, and gross tonnage of each of the steam vessels now owned by the Dominion government. 2. The names of those built in Canada. 3. What ones thrown open to Canadian competition. 4. In each case that was open to Canadian competition, the difference between the lowest Canadian tender and the price paid. 5. In each case where a contract was made with a builder for the construction of any of said steam vessels, the month and day when each of said contracts were signed, and when each of said contracts called for delivery of vessels. 6. The price each of the said steam vessels would have cost if the government in each case paid the current Canadian customs duty chargeable on vessels constructed outside of Canada. Presented 24th February, 1910.—*Mr. Sinclair*.

Printed for sessional papers.

CONTENTS OF VOLUME 19—Continued.

114. Return to an order of the House of Commons, dated 15th March, 1909, showing:
 1. The number and names of the various dredges owned by the government. 2. When and by whom constructed, or when and from whom purchased. 3. The price paid for each dredge. 4. On what work each dredge has been engaged in in each of the years 1905, 1906, 1907 and 1908. 5. How many mouths during each of these years each dredge was working, and how many cubic yards of material each dredge removed per month. 6. The cost of maintaining and cost of operating each dredge for each of these years. 7. The names of the dredges leased during these years, if any, to whom leased, on what terms, and what amounts were received each year under such leases. Presented 24th February, 1910.—*Mr. German*... ..*Not printed.*
115. Return to an order of the House of Commons, dated 19th January, 1910, for a copy of all letters, telegrams, petitions and other correspondence in connection with the establishing of a post office to be named Charleston or Kelmout, on the south side of Assiniboine river, in the parish of St. Charles, province of Manitoba. Presented 24th February, 1910.—*Mr. Staples*... ..*Not printed.*
116. Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all correspondence between the District Officer Commanding Military District Number 11 and the Department of Militia, with reference to the battery of 12-pounder B.L. guns recently sent to Esquimalt, or with reference to the proposal that No. 1 Company of the 5th Regiment, C.A., should train on said guns. Presented 24th February, 1910.—*Mr. Barnard*... ..*Not printed.*
117. Return to an order of the House of Commons, dated 7th February, 1910, showing the total cost to Canada of the Military College buildings and grounds, and the amount furnished each year by the government towards its maintenance. Presented 21th February, 1910.—*Mr. Armstrong*... ..*Printed for sessional papers.*
118. Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all papers, affidavits and correspondence between the Interior Department and John A. Dunn, or anyone in his behalf, and any official of the department, concerning the application for patent of the n.w. $\frac{1}{4}$ sec. 34, tp. 35, range 16, west of the 2nd meridian. Presented 24th February, 1910.—*Mr. Roche*... ..*Not printed.*
119. Statement of the affairs of the British Canadian Loan and Investment Company (Limited), for the year ended 31st December, 1909. Also a list of the shareholders on 31st December, 1909, in accordance with chapter 57 of 39 Victoria. Presented (Senate) 25th February, by the Hon. the Speaker... ..*Not printed.*
120. Return to an order of the Senate, dated 23rd November, 1909, for a copy of each charter granted since 1st June, 1909, by the Secretary of State, by letters patent under The Companies Act, chapter 79 of the Revised Statutes, 1906. (a) Incorporating any company with powers for the development, production, distribution or use of water power for any purposes; or with powers for the production, distribution and use of water power for any purposes; or with powers for the production, distribution and use of electricity in any form by any means, whether directly or by the transformation thereof into heat, light, power or any other kind of energy; or (b) conferring such powers upon any company previously incorporated. Presented 1st March, 1910.—*Hon. Mr. David*... ..*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 121.** Return to an order of the House of Commons, dated 14th February, 1910, showing the amounts that have been paid to the *Whig* Publishing Company for printing and advertising by or for any departments of this government other than Militia and Defence and Marine and Fisheries, each year, from 1896 to the present time. Presented 2nd March, 1910.—*Mr. Edwards*... ..*Not printed.*
- 121a.** Supplementary Return to No. 121. Presented 10th March, 1910... ..*Not printed.*
- 122.** Return to an order of the House of Commons, dated 29th November, 1909, for a copy of all letters, correspondence, papers, bills and memorials, passing between the government of the province of Manitoba and the Dominion government since 1st January, 1907. Presented 2nd March, 1910.—*Mr. Roche*... ..*Not printed.*
- 122a.** Return to an address of the House of Commons, dated 28th February, 1910, and also of the Senate, dated 24th February, 1910, for a copy of all correspondence between the Dominion government and the government of Manitoba on the subject of the extension of the boundaries of the province of Manitoba since the resolution adopted by the House of Commons on the 13th day of July, 1908. Presented 2nd March, 1910.—*Hon. Mr. Watson and Mr. Molloy*... ..*Not printed.*
- 123.** Return to an address of the Senate, dated 3rd February, 1910, for the production of all correspondence between the Honourable George E. Foster, M.P., and the government of Canada, or any of their members since the year 1878, in relation to appointment of judges to the judicial bench and of members to the Senate of Canada. Presented 6th April, 1910.—*Hon. Mr. Cloran*... ..*Not printed.*
- 124.** Return to an order of the House of Commons, dated 28th February, 1910, showing all sums of money received by the *Soleil* Publication Company, the *Vigie* Publication Company, and the *Daily Telegraph* Publication Company of Quebec, from the different federal departments, and from the Transcontinental Commission, since the first day of March, 1908, and the respective dates of each payment. Presented 3rd March, 1910.—*Mr. Paquet*... ..*Not printed.*
- 125.** Return to an order of the House of Commons, dated 29th November 1909, for a copy of all correspondence, reports, advertisements, tenders, contracts and other papers and documents relative to the maintenance of a wrecking plant on the Pacific or Atlantic coasts, or in the River or Gulf of St. Lawrence, not already brought down. Presented 3rd March, 1910.—*Mr. Taylor (Leeds)*... ..*Not printed.*
- 126.** Return to an order of the House of Commons, dated 19th January, 1910, showing how much money has been paid by this government in each year from 1896 to 1909, both years included, to the firms of Elliott Bros., and of R. Carson, of Kingston, Ontario, for supplies furnished to, or services of any kind performed by the government. Presented 4th March, 1910.—*Mr. Edwards*... ..*Not printed.*
- 127.** Return to an order of the House of Commons, dated 19th January, 1910, showing:
 1. The amount of Canada's copper, silver, and gold coinage, respectively, for each of the last ten years, and the cost and profit of each year's coinage, counting the interest and depreciation of the cost of the Canadian Mint at 6 per cent, and the cost of maintenance and staff for the years during which it has been in operation. 2. The amount of United States silver, and at what cost that has been deported each year, and the estimated amount of United States silver current in Canada from year to year. Presented 4th March, 1910.—*Mr. Foster*... ..*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 128.** Return to an order of the House of Commons, dated 7th February, 1910, showing the number of chartered banks that have gone into liquidation since 1888, the date of the charters of each, the date of suspension, the capital stock, assets and liabilities, respectively, at date of suspension, and the per cent of dividends paid to both holders and depositors respectively. Also what other banks have disappeared by amalgamation or otherwise, with similar information as above in respect to them. Presented 4th March, 1910.—*Mr. Foster*... ..*Not printed.*
- 129.** Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all memorials, reports, correspondence and documents not already brought down, including report of the survey made during the past summer and autumn of the harbour at Cape John and Tatamagouche Bay, in the counties of Picton and Colchester, in the province of Nova Scotia, relating to the route of the winter steamers between Prince Edward Island and the mainland of Canada, and suggesting and recommending a change or changes in the said route, and an increase in the number of trips daily of such winter steamers; and also a copy of all memorials, reports, correspondence and documents relating to the route of the summer mail steamers between Charlottetown and the mainland of Canada, and suggesting a change or changes in that route, and an increase in the number of trips daily of such summer mail steamers; and also with regard to connecting such suggested new summer route or routes with a point or points on the Intercolonial Railway; and also for a copy of all memorials, and correspondence, asking for additional and improved aids to navigation of the harbour of Charlottetown and in Tatamagouche Bay and harbour. Presented 4th March, 1910.—*Mr. Warburton*... ..*Not printed.*
- 130.** Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all reports of surveys of any projected railway lines or routes in the province of Prince Edward Island during the years 1905 and 1909, and particularly reports of the surveys of any such line from Royal Junction, or thereabouts, to Kensington or thereabouts; also of all correspondence, recommendations, documents and papers of every kind, nature and description relating to or concerning the said projected railway lines or routes or the surveys therefor. Presented 6th March, 1910.—*Mr. Borden*...*Not printed.*
- 130a.** Return to an order of the House of Commons, dated 14th March, 1910, for a copy of all memorials, reports of surveys, engineers' reports, estimates, correspondence and documents in the possession of the Department of Railways and Canals, and of the Intercolonial Railway Commission, relating to the survey and construction of a proposed branch of the Prince Edward Island Railway through New London and along the north shore of Queens County, in that island. Presented 8th April, 1910.—*Mr. Warburton*.
Not printed.
- 131.** Return to an order of the Senate, dated 22nd February, 1910, for a comparative statement for the years 1907, 1908 and 1909, of crude petroleum oil imported into Canada, and values. Presented 4th March, 1910.—*Hon. Mr. Domville*... ..*Not printed.*
- 132.** Return to an order of the House of Commons, dated 28th February, 1910, for a copy of reports of the following Quarantine Frontier Inspectors:—Dr. Bradford, Dr. Carter, Dr. Duncan, Dr. Thornton, Dr. Wallace, Dr. May, Dr. McKenty, Dr. Little, Dr. Henderson and Dr. Scott. Presented 9th March, 1910.—*Mr. Sharpe (Lisgar)*...*Not printed.*
- 133.** Report of the Hydrographic Survey, in connection with Irrigation, for the season of 1909. Presented 10th March, 1910, by Hon. F. Oliver.

Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 19—*Continued.*

- 134.** Return to an order of the House of Commons, dated 17th February, 1909, showing particulars of the places where the expenditures mentioned in column 365, unrevised *Hansard*, for wharfs in Nova Scotia, New Brunswick and British Columbia, where made, together with amounts expended in each instance for construction and repairs, respectively. Presented 10th March, 1910.—*Mr. Barnard*. *Not printed.*
- 135.** Return to an address of the House of Commons, dated 16th November, 1909, for a copy of all petitions addressed to the government or any member thereof, as well as of all letters, correspondence and reports in the possession of the government, and having reference to repairs required at two wharfs built by the government and situated at Ste. Genevieve and Isle Bizard, in Jacques Cartier County, P.Q., and also all the correspondence concerning the construction of those wharfs, and of their use as piers for a bridge. Presented 11th March, 1910.—*Mr. Monk*. *Not printed.*
- 136.** Return to an order of the House of Commons, dated 17th January, 1910, showing the foreign exhibitions in which Canada has taken part since July, 1896, the time and place where such was held, the expenditure thereon by the government of Canada, the persons, not common labourers, who had charge of the same or were employed thereat, the sums paid to such severally under the heads of (a) salary, (b) expenses, and the total cost to the country of each such exhibition; also the amounts received as revenue from the sale of articles or commodities, lumber, buildings and other materials, respectively. The whole statement to be made up in tabular form and the additions of money columns to be made. Presented 11th March, 1910.—*Mr. Foster*.
Printed for sessional papers.
- 137.** Return to an order of the Senate, dated 18th February, 1910, for a statement showing the number of homestead entries, pre-emptions, scrip locations and military warrant locations in townships 35, 36, 37, 38 and 39, in ranges 1 to 19, inclusive, of 4th meridian, and in townships 32, 33 and 34, in ranges 1 to 8 inclusive, west of 4th meridian. Presented 16th March, 1910.—*Hon. Mr. Tolbot*. *Not printed.*
- 138.** Return to an order of the House of Commons, dated 19th January, 1910, for a copy of all correspondence between the government, or any member thereof, and the Imperial South African Service Association, or any of its officers, in reference to a proposed military reserve to be formed by the members of the Imperial South African Veterans' Association. Presented 17th March, 1910.—*Mr. Macdonald*. . . *Not printed.*
- 139.** Return to an address of the House of Commons, dated 14th February, 1910, for a copy of all orders in council, correspondence, reports, documents and papers, relating to the right or privilege to raise the waters of Clear Lake, province of Manitoba, application for which was made by a company to develop power on the Little Saskatchewan river. Presented 21st March, 1910.—*Mr. Roche*. *Not printed.*
- 140.** Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all correspondence, advertisements, tenders and other documents, in connection with a proposal or proposals to lease a part or the whole of the Black Foot Reserve. Presented 21st March, 1910.—*Mr. Magrath*. *Not printed.*
- 141.** Return to an order of the House of Commons, dated 14th March, 1910, for a copy of all correspondence, reports, documents and papers relating to the strike of the employees of the Dominion Coal Company and the Cumberland Coal and Railway Company, in the counties of Cape Breton and Cumberland, Nova Scotia. Presented 23rd March, 1910.—*Mr. Rhodes*. *Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 141a.** Supplementary Return to No. 141. Presented 13th April, 1910... ..*Not printed.*
- 142.** Return to an order of the House of Commons, dated 24th November, 1909, showing the total amounts paid by the government in each year since 1896, for all printing, advertising and lithographing done outside of the Government Printing Bureau; the total amount so paid by each department of the government for such purposes during each year; the names and addresses of each individual, firm or corporation to whom any such moneys have been so paid, and the total amount paid to each individual, firm or corporation in each year since 1896. What portion of the said sums, if any, so paid since 1896, was expended after public advertisement, tender and contract, to whom such tenders were awarded, whether to the lowest tender in each case, what portion was expended otherwise than by public advertisement, tender and contract, and to whom it was paid in each instance. Presented 23rd March, 1910.—*Mr. Armstrong.*
Not printed.
- 143.** Return to an order of the House of Commons, dated 19th January, 1910, showing:
1. How much money has been paid by this government from 1896 to the present time to the firm of Sullivan & Langdon, contractors, of Kingston, or to Mr. Sullivan, contractor, Kingston. 2. What public buildings or other public works that have been let by contract to either of the above firms since 1896, the contract price in each case, and the total amount paid to the said contractors in each case. 3 The total cost of each building or public work in which either of the above mentioned firms was interested. Presented 23rd March, 1910.—*Mr. Edwards.*... ..*Not printed.*
- 144.** Return to an order of the House of Commons, dated 19th January, 1910, showing:
1. All amounts which may be deducted from the allowances due officers commanding corps of the active militia to cover deficiencies in clothing, &c., deposited to the credit of the Receiver General of Consolidated Revenue. 2. The amount of money that has been received from officers commanding corps of active militia during the five years ended 31st March, 1909, in payment for clothing issued to such corps, including deductions from allowances to cover repayment to replace deficiencies. Presented 30th March, 1910.—*Mr. Worthington.*... ..*Not printed.*
- 145.** Rules of the Supreme Court of Saskatchewan, under the provisions of section 576 of the Criminal Code. Presented 30th March, 1910, by Hon. A. B. Aylesworth.
Not printed.
- 146.** Copy of correspondence between the Canadian government and the government of Great Britain in respect to the purchase by Canada of the cruiser *Rainbow*. Presented 30th March, 1910, by Sir Wilfrid Laurier... ..*Printed for sessional papers.*
- 146a.** Copy of correspondence between the Canadian government and the government of Great Britain in respect to the purchase of the cruiser *Niobe*. Presented 30th March, 1910, by Sir Wilfrid Laurier... ..*Printed for sessional papers.*
- 147.** Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all correspondence respecting the Central Park Post Office during the year 1909 and including particularly a copy of: 1. Representations made to the department that by changing the location of the office and establishing a post office at Collingwood East, the interest of the majority of the residents would be best served. 2. The evidence taken at the inquiry following such representations, and the official report upon such evidence. 3. Communications from residents of Central Park and others with respect to the closing of the post office there, and the answer made thereto in accordance with the facts. 4. The information upon which it was determined that the removal of the post office would be a greater convenience. 5. The largely signed petition from patrons

CONTENTS OF VOLUME 19—*Continued.*

of the Central Park Post Office complaining of the management, &c.; and the report of the inspector who investigated the same. Presented 31st March, 1910.—*Mr. Taylor (New Westminster)*.. . . .*Not printed.*

148. Return to an order of the House of Commons, dated 14th March, 1910, showing, for the last two months, the time of each transmission of mails from Montreal to London, England, and from London, England, to Montreal and showing the date and hour of closing, and date and hour of delivery in each case. Presented 31st March, 1910.—*Mr. Monk*.. . . .*Not printed*

149. Return to an order of the House of Commons, dated 14th March, 1910, showing the names of the sessional and temporary employees of the House of Commons who were under pay on the 27th January last; and the number of the said employees stated in the estimates of 1909-10. Presented 31st March, 1910.—*Mr. Best.*

Printed for sessional papers.

150. Return to an order of the House of Commons, dated 24th January, 1910, for a copy of all correspondence between Celstin Prgent, of Melocheville, P.Q., either personally or through his attorney, and the Department of Railways and Canals, concerning certain bridges on the Beanharnois canal. Presented 31st March, 1910.—*Mr. Monk.*

Not printed.

151. Return to an order of the House of Commons, dated 14th March, 1910, showing what amount of money has been paid each year to Geo. Walton, Manitoba, by the Interior Department, from January 1st, 1906, to December 31st, 1909; and what monies Mr. Geo. Walton has received since January 1st, 1909, from any other department of the government. Presented 4th April, 1910.—*Mr. Schaffner*.. . . .*Not printed.*

152. Return to an order of the House of Commons, dated 7th February, 1910, for a copy of all correspondence relating to all coal lands reserved for as well as those acquired by the Bow River Collieries by direct application or a-signment. Presented 4th April, 1910.—*Mr. Northrup*.. . . .*Not printed.*

153. Report of Harry Freeman Alward, Commissioner appointed to investigate into the matter of complaints concerning James Dickson, government valuator, Trent canal, pursuant to Part II, of the Inquiries Act, Revised Statutes of Canada, 1906, held at Peterborough and Hastings, Ontario, March 23th to March 29th, inclusive, 1910; and also a copy of the evidence in relation thereto. Presented 5th April, 1910, by Hon. G. P. Graham.. . . .*Not printed.*

154. Return to an order of the Senate, dated 14th January, 1910, for a statement comprising, in so many distinct columns, the names, dates and appointment, nature of employment, salary, travelling expenses, and indication of the section where the person was employed, of all persons in the service of the Commission for the construction of the Grand Trunk Pacific Railway between Moncton and Winnipeg. Presented 6th April, 1910.—*Hon. Mr. Bolduc*.. . . .*Not printed.*

155. Return to an order of the House of Commons, dated 14th February, 1910, for a copy of all pay-sheets, accounts, and vouchers for wages, material and expenditure in connection with work on Skinner's Cove, Boat Harbour, Pictou County, Nova Scotia, in the years 1907, 1908 and 1909. Presented 8th April, 1910.—*Mr. Stanfield*..*Not printed.*

CONTENTS OF VOLUME 19—Continued.

- 155a.** Return to an order of the House of Commons, dated 14th February, 1910, for a copy of all payments, accounts and vouchers for wages, materials and other expenditures in connection with work on the Toney river, Boat Harbour, Pictou County, Nova Scotia, in the years 1907, 1908 and 1909. Presented 8th April, 1910.—*Mr. Rhodes.*
Not printed.
- 156.** Return to an order of the House of Commons, dated 15th December, 1909, showing: At what places in the several provinces armouries and drill halls have been erected, and when they were erected; the total cost of the site in each case, and when and from whom purchased; the contract price of each building, and to whom and when the contract was awarded; the total cost of each building; in what places armouries and drill halls are being constructed at present, and the cost of the site, from whom and when purchased; the estimated cost of the building in each case, and to whom, when and at what price the contract was awarded, and the names of places other armouries and drill halls are to be built by the government in the near future. Presented 8th April, 1910.—*Mr. Edwards.**Not printed.*
- 156a.** Supplementary Return to No. 156. Presented 14th April, 1910.*Not printed.*
- 157.** Return to an order of the House of Commons, dated 28th February, 1910, for a copy of all correspondence, accounts, vouchers and reports, relating to the accident at Sault Ste. Marie lock in June, 1909; the number of vessels and tonnage with port of destination, and number of passengers passing through the Canadian lock at Sault Ste. Marie, during the months of April to December, both inclusive, 1909. Presented 8th April, 1910.—*Mr. Boyce.**Not printed.*
- 158.** Return to an order of the House of Commons, dated 28th February, 1910, for a copy of the original field notes of the survey of Captain Jemmett, 1889, on Chu-Chu-Way-Ha Reserve, No. 2, Similkameen District, B.C. Presented 14th April, 1910.—*Mr. Burrell.*
Not printed.
- 159.** Return to an order of the House of Commons, dated 14th February, 1910, for a copy of all pay sheets, accounts and vouchers for wages, materials and other expenditures in connection with work on the Causeway between Cariboo and Cariboo Island, Pictou County, Nova Scotia, in the years 1907, 1908 and 1909. Presented 11th April, 1910.—*Mr. Borden (Halifax).**Not printed.*
- 160.** Statement of representation made to the Honourable the Minister of Labour by interviews and in the form of correspondence in respect of Bill No. 101, 'An Act for the investigation of combines, monopolies, trusts and mergers which may enhance prices or restrict competition to the detriment of consumers.' Presented 14th April, 1910, by Hon. W. L. M. King.*Not printed.*
- 161.** Return to an order of the House of Commons, dated 14th March, 1910, for a copy of all papers and correspondence relating to the sale and refund of the money paid on the sale of the n.e. $\frac{1}{4}$ section of section 11, township 1, range 9, west of the 1st meridian in Manitoba. Presented 15th April, 1910.—*Mr. Sharpe (Lisgar).**Not printed.*
- 162.** Return to an order of the Senate, dated 7th April, 1910, for a copy of all correspondence or petitions received by the government from Manitoba grain growers in connection with terminal elevators, especially a letter dated the 31st January, 1910. Presented 14th April, 1910.—*Hon. Mr. Kirchhoffer.**Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 163.** Return to an address of the Senate, dated 11th March, 1910, for the production of the report of every inquiry made and of all correspondence exchanged during the last five years on the subject of one or more seizures of goods consigned to or the property of the Quebec Rock City Tobacco Company, as well as on the subject of every remission of fines incurred by the said company for infraction of the Inland Revenue laws or regulations. Presented 14th April, 1910.—*Hon. Mr. Landry*.*Not printed.*
- 164.** Return to an order of the House of Commons, dated 7th February, 1910, showing the number of persons appointed as temporary employees of the civil service in the several departments since the present Civil Service Act came into force, the date of the appointment of each, their names, their salaries while employed as such temporary employees, the department in which such employee was placed, the duration of their employment, whether in one department alone or in case of transfer to another or other department, with total length of time employed, the names of those who in consequence of having passed the Civil Service examination have been employed permanently, the names of those who while temporarily employed failed to pass the required examination and are still employed in the service; the names of those who are or have been employed over the statutory six months as temporary employees, and the reasons for such continued employment in each case. Presented 18th April, 1910.—*Mr. Hughes*.
Not printed.
- 165.** Return to an order of the House of Commons, dated 19th January, 1910, for a copy of all papers, letters, telegrams, documents and correspondence in connection with the establishment of the Experimental Farm near Lethbridge, Alta. Presented 18th April, 1910.—*Mr. Magrath*.*Not printed.*
- 166.** Certified copies of reports of the Committee of the Privy Council of 17th January, 1908, and of the 14th November, 1908, respecting a homestead entry granted to Mr. Charles D. T. Becher, for the n.e. $\frac{1}{4}$ of section 20, township 52, range 24, west of the fourth meridian, &c. Presented 18th April, 1910, by Hon. F. Oliver.*Not printed.*
- 167.** Return to an order of the Senate, dated 10th February, 1910, of all surveys, plans, reports and other documents connected with the improvement of the Saskatchewan river, with a view to facilitate transportation by water of passengers and freight from the foot of the Rocky Mountains to the city of Winnipeg, Man. Presented 19th April, 1910.—*Hon. Mr. Davis*.*Not printed.*
- 168.** Return to an order of the House of Commons, dated 24th November, 1909, for a copy of all correspondence and papers, and any information possessed by the government relating to the formation and work of the Secretariat decided upon by the Imperial Conference of 1907. Presented 20th April, 1910.—*Mr. Foster*.
Printed for both distribution and sessional papers.
- 169.** Correspondence between the Clerk of the House and the Department of Justice with reference to the organization of the staff of the House of Commons. Presented 21st April, 1910, by Hon. W. S. Fielding.*Not printed.*
- 170.** Certified copy of a report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 15th April, 1910, in respect to chapter 10 of the Statutes of Ontario, 1909, intituled: 'An Act to amend an Act to chapter 19 of the Statutes of Ontario, 1909,' intituled: 'An Act to amend an Act to provide for the transmission of Electrical Power to Municipalities,' to validate certain contracts entered into with the Hydro-Electric Power Commission of Ontario, and for other purposes.' Presented 25th April, 1910, by Hon. A. B. Aylesworth.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 171.** Return to an order of the House of Commons, dated 14th March, 1910, for a copy of all papers and correspondence between different persons or companies and the Department of Mines, in reference to a charge of unprofessional conduct made in the *Canadian Mining Journal* of July 1, 1909, against Mr. Fritz Cirkle, a mining engineer, temporarily employed by the Department of Mines in preparing a report on the asbestos mining industry of the province of Quebec. Presented 27th April, 1910.—*Mr. Smith (Nanaimo)*.*Not printed.*
- 172.** Return to an order of the House of Commons, dated 6th December, 1909, for a copy of all letters, communications, petitions and correspondence with and by the government or any minister, with regard to the acquiring or building by the Government of Terminal Elevators at any point or points in Canada. Presented 27th April, 1910.—*Mr. Campbell*.*Not printed.*
- 172a.** Report of the investigation of the terminal elevator companies. Presented 29th April, 1910, by Hon. Frank Oliver.*Not printed.*
- 173.** Return to an order of the Senate, dated 21st January, 1910, for a copy of the contract entered into between Messrs. Koenig & Company, and the government, for clearing away the ruins of the Quebec bridge. Presented 28th April, 1910.—*Hon. Mr. Landry*.*Not printed.*
- 174.** Return to an order of the Senate, dated 10th March, 1910, for a statement regarding Indian affairs in British Columbia for the years 1908 and 1909, showing:—The number of persons and place of residence to whom salaries are paid and the amounts. The number of Indians to whom food or clothing were given, in what districts, and the value. How many hospitals are there for Indians, in what districts, how many Indians treated, and the cost. The number of agents travelling, how many trips in the year, what are the allowances per day. How many offices are rented, in what localities, and the rent paid. How many Indian orchards were cleared and where. How many Indians received seed and implements, and where. Presented 29th April, 1910.—*Hon. Mr. Macdonald (B.C.)*.*Not printed.*
- 175.** Return to an order of the House of Commons, dated 14th March, 1910, for a copy of all correspondence, papers, affidavits, cancellations, &c., in connection with the entry of Wm. Reid Gardiner, for the n.w. $\frac{1}{4}$ section 22, township 35, range 16, west of the 2nd meridian. Presented 2nd May, 1910. *Mr. Roche*.*Not printed.*
- 176.** Return to an order of the House of Commons, dated 15th December, 1909, for a copy of the report, plans and correspondence in the hands of the government regarding the construction of branch post offices and postal substations in and around the city of Montreal, and of all proposals and suggestions made to the government by the post office authorities at Montreal for the establishment, in a systematic way, of postal branches and substations in said city and suburbs. Presented 2nd May, 1910.—*Mr. Monk*.*Not printed.*
- 176a.** Supplementary Return to No. 176. Presented 4th May, 1910.*Not printed.*
- 177.** Return to an order of the House of Commons, dated 28th February, 1910, for a copy of all papers, correspondence and petitions in reference to the changing of the post office at Windygates, in the province of Manitoba. Presented 2nd May, 1910.—*Mr. Sharpe (Lisgar)*.*Not printed.*

CONTENTS OF VOLUME 19—*Continued.*

- 178.** Return to an order of the House of Commons, dated 28th February, 1910, for a copy of all representations made by business or commercial men or citizens of Winnipeg to the department or government since the contemplated action of the government in reference to closing or keeping open the post office to box holders on Sundays, and who made them; and of all orders given by the Postmaster General or his department to the postmasters in reference to this Sunday closing. Presented 2nd May, 1910.—*Mr. Haggart (Winnipeg)*... ..*Not printed.*
- 178a.** Supplementary Return to No. 178. Presented 2nd May, 1910... ..*Not printed.*
- 179.** Return to an order of the House of Commons, dated 17th November, 1909, for a copy of all accounts, vouchers, correspondence, reports and other papers, not already brought down in connection with the survey of the St. John River channel between Fredericton and Woodstock, N.B. Presented 2nd May, 1910.—*Mr. Crocket*... ..*Not printed.*
- 180.** Return to an address of the Senate, dated 17th March, 1910, for all documents, letters, returns, &c., concerning the damming of the river La DéCharge, near Lake St. John, in the district of Chicoutimi; which returns are to the effect of showing whether it would be possible to maintain the level of Lake St. John at a reasonable height in order to ensure serviceable navigation on that lake and its tributaries. Presented 2nd May, 1910.—*Hon. Mr. Choquette*... ..*Not printed.*
- 181.** Return to an address of the House of Commons, dated 14th February, 1910, for a copy of all orders in council, reports, correspondence, documents and papers not already brought down relating to the construction of the Georgian Bay canal, or any portion thereof, relating to the surveys thereof, and all offers, proposals and written negotiations not already brought down, with respect to the construction of the said canal or any portion thereof by any company, corporation or syndicate, or with respect to the guarantee by the government of bonds or debentures for the purpose of raising the necessary capital for the construction of the said canal. Presented 3rd May, 1910.—*Mr. White (Renfrew)*... ..*Not printed.*
- 182.** Return to an address of the House of Commons, dated 17th January, 1910, showing the various commissions appointed for all purposes by the government since July 1896, the person or persons composing the commission and the date of appointment, the purpose for which appointed, the date of completion of the work in each case, and the cost of each under the head (a) salary, (b) travelling expenses, and (c) printing report, if any; the word 'commissions' to include the missions of ministers, single or associated, going on public account to the countries outside of Canada. Presented 3rd May, 1910.—*Mr. Foster*... ..*Not printed.*
- 182a.** Supplementary Return to No. 182. Presented 3rd May, 1910... ..*Not printed.*
- 183.** Return to an order of the House of Commons, dated 28th February, 1910, showing the number of persons in the employ of each department of the government during the year 1909 under the following heads: (a) civil service employees at Ottawa; (b) civil service employees outside of Ottawa; (c) in stated and regular employ, but not under the Civil Service Act, giving the distinctive service of each group; (d) those in temporary or casual employment, giving the distinctive work of each group, and also showing the total amount paid under each head. Presented 3rd May, 1910.—*Hon. Mr. Foster*... ..*Not printed.*
- 184.** Return to an order of the Senate, dated 2nd May, 1910, showing for each of the last ten years the date of the prorogation of parliament and the date on which the bound statutes of the session were distributed. Presented 4th May, 1910.—*Hon. Mr. Power*... ..*Not printed.*

CANADA

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE

FISCAL YEAR ENDED MARCH 31

1909

*Submitted in Accordance with the Provisions of Chapter 39, Section 34,
of the Revised Statutes of Canada.*

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1909



*To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey,
G.C.M.G., &c., Governor General of Canada.*

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the fiscal year ended March 31, 1909.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

WILLIAM PUGSLEY,

Minister of Public Works.

OTTAWA, September 21, 1909.

CONTENTS.

- Part I.—DEPUTY MINISTER'S REPORT.
- “ II.—ACCOUNTANT'S REPORT.
- “ III.—CHIEF ARCHITECT'S REPORT.
- “ IV.—CHIEF ENGINEER'S REPORT.
- “ IV.—APPENDIX 'A,' GEORGIAN BAY SHIP CANAL SURVEY.
- “ V.—GENERAL SUPT. OF TELEGRAPH'S REPORT.
- “ VI.—COLLECTOR OF REVENUE'S REPORT.
- “ VII.—MISCELLANEOUS REPORTS.

ALPHABETICAL INDEX REPORT

Names of Places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
A							
Abercrombie Point, N.S.		14		3			
Accountant's report		1					
Acton Vale, P.Q., public building		8					
Agassiz, B.C., experimental farm		13, 37					
Agency, B.C., Public Works		30					
Agnes, P.Q.		21		84			
Alberta, public buildings		12, 36	36				
Albarni-Cape Beal, telegraphs		29					
" Claycoquot telegraphs		29					
Alexandria, Ont., public building		9, 34					
Allendale, Ont., wharf		24		137			
Almonte, Ont., public building		9, 34					
Amaguadees, N.S.				4			
Amherst, P.Q.		21		85			
Amherstburg, Ont.		24		137			
" public building		9, 34					
Amherst Point, N.S.		14		4			
" N.S., public building		7, 32	3				
Amiro's Hill, N.S.		14		4			
Anderson's Hollow, N.B.		18		58			
" Cove, N.S.		14		5			
Annapolis, N.S., public building		7	3				
" wharf		14		5			
Annandale, P.E.I.		17					
Anse à la Barbe, P.Q.		20		85			
Anse à Beaufils, P.Q.		20		85			
Anse à la Cave, P.Q.		20		85			
Anse à la Louise, P.Q.		20					
Anse à la Grosse Roche, P.Q.		20					
Anse à l'Eau, P.Q.		23		135			
Anse à l'Islet, P.Q.		20		85			
Anse aux Gascons, P.Q.		20		86			
Anse aux Griffons, P.Q.		20		86			
Anse St. Jean, P.Q.		20		86			
Anse du Cap, P.Q.		20		91			
Anticosti, P.Q., telegraphs		29			9, 48		
Antigonish, N.S., public building		7, 32					
Arnprior, Ont., public building		9, 34					
" wharf		24		137			
Argyle Head, N.S.		14		5			
Arisaig, N.S.		14		5			
Arischat, N.S., public building		7, 32					
Ashcroft-Dawson, telegraphs		29					
Ashouapmouchouan, P.Q.				87			
Athabaskaville, P.Q., public building		8					
Athabaska, Sask.		12					
Athin, B.C., post-office		13, 37					
Avonport, N.S.		14		6			
Aylmer, Que. post-office		8, 33					
" wharf		20					
B							
Baddeck, N.S., public building		7, 32					
" wharf		14		6			
" N.S.		14		6			
Baie du Vin, N.B.		18					
" Lavallière, P.Q.		20					
" St. Paul, P.Q.		20		87			
Bailey's Brook, N.S.		14		7			
Baldwin Hon. R. monument		30					

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
B							
Banff, Alta., museum		12					
Bannerman, Man., quarantine station....		12					
Barachois de Malbaie, P.Q.		20		88			
Barachois, N.S.		14		7			
Barrie, Ont., public building.....		9, 34	16				
Barrington Passage, N.S.		14					
Bass River, N.S.		14		7			
Bassin, P.Q.		21		88			
Bathurst, N.B., public building		7, 32					
" wharf		18					
Batiscan, Que.		20					
Battery Point, N.S.		14		7			
Battleford, N.W.T., public building		12					
Baxters, N.S.		15		23			
Bay of Fundy, telegraphs.....		29, 36			9, 46		
Bayfield, Ont.		24		138			
Bayville, Ont.		24		138			
Bay Creek, N.S.		14					
Bay Fortune, P.E.I.		17		51			
Bayfield, N.S.		14		8			
Bay St. Lawrence, N.S.		14		8			
Bay View pier, P.E.I.		17		51			
Beacon Bar, N.B.		19					
Bear Lake, N.B.				58			
Bear Trap Cove, N.S.		14					
Bear Cove, N.S.				8			
Beaver Harbour, N.B.		18		59			
" " N.S.				8			
" River, N.S.		14		8			
Beaverton, Ont.				138			
Belas Basin, N.B.		18					
Belfast Pier, P.E.I.		17		52			
Belfry Gut, N.S.				9			
Bellevue, Ont., armoury		9, 34	16				
" post office		9, 34	16				
Belle River, P.E.I.		17		52			
" Ont.				138			
Belliveau's Cove, N.S.		14		9			
Belœil, P.Q.		20		88			
Berlin, Ont., public building		9, 34	16				
Berthier, P.Q.		20		89			
Berthierville, P.Q., public building		8, 33					
Bewdley, Ont.		24		139			
Bic, P.Q.		20		90			
Big Bras d'Or, N.S.		14		9			
Big Harbour, N.S.		14					
Birdsall, Ont.		24		139			
Black Cape, P.Q.		20		90			
" Harbour, N.B.		18					
" River, Ont.		24		139			
" Rock, N.S.		14		10			
Blanche River, Ont.		24		140			
Blind River, Ont.		24		140			
Blue Rock, N.S.		14		9			
Bluff Head, N.S.		14		10			
Bonaventure, east, P.Q.		20		90			
" west, P.Q.				91			
Bon Desire, P.Q.		20		85			
Bowmanville, Ont., public building		9, 34	16				
" harbour		24		141			
Bracebridge, Ont.		24		141			
Brampton, Ont., public building		9, 34					
Brandon, Man., public building		12, 36	33				
Brantford, Ont., public building		9, 34	16				
Brèche à Manon, P.Q.		20					
Breton Cove, N.S.		14					
Bridesville, B.C.		13					
Bridgeburg, Ont., public building		9, 34					

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
B							
Bridgewater, N.S., public building.....		7, 32	3				
Bridges and roads.....		29		343			
British Columbia, dredging.....		27		325			
" " harbours and rivers.....		26		180			
" " public buildings.....		13	36				
" " telegraphs.....		29			9, 39		
Broad Cove Marsh, N.S.....		14					
Broad Cove, N. S.....		15		22			
Brockville, Ont., public building.....		9	17				
Bronte, Ont.....		24		141			
Bruce Mines, Ont.....		24		142			
Buckingham, P.Q., public building.....		8, 33					
Buctouche Beach, N. B.....		18		59			
Burleigh Falls, Ont.....				142			
Burlington Channel, Ont.....		24		142, 235			
Burton, N.B.....		19					
Byng Inlet, Ont.....		24					
C							
Cable, ship <i>Tyrian</i>		29			9		
Cacouna, P.Q.....		20					
Calgary, Alta, public buildings.....		12, 36					
Callender, Ont.....		24		143			
Campbell River, B.C.....		26		180			
Campbellton, N. B., public building.....		7, 32	5				
" " wharf.....		18		59			
Canada Creek, N.S.....		14		10			
Canning, N. S., public building.....		7					
" " wharf.....				11			
Canso, N.S., public building.....		7, 32					
Canton Fabre, P.Q.....		20		97			
Cap à l'Aigle, P.Q.....		20					
Cap à la Baleine, P.Q.....		20		91			
Cap Chatte, P. Q.....		20					
Cap des Rosiers, P. Q.....		20					
Cap Santé, P.Q.....		20		92			
Cap St. Ignace, P.Q.....		20		92			
Cape Auger, N.S.....		14		11			
Cap Bald, N.B.....		18		60			
Cape Breton, N.S., telegraphs.....		29			8, 45		
Cape Cove, P. Q.....		20		91			
Cape Croker, Ont.....		24		143			
Cape North, N. S.....		14		11			
Cape Ray, telegraphs.....		29			8		
Cape St. Mary, N.S.....		14		11			
Cape Tormentine, N.B.....		18		60			
Caplan, P. Q.....		20		91			
Caribon Island, N.S.....		14		12			
Carleton, P.Q.....		20		92			
Carleton Place, Ont., public building.....		9					
Carter's, N.B.....		19					
Castle Bay, N.S.....		14					
Caughnawaga, P. Q.....		20		93			
Cayuga, Ont., public building.....		9, 34					
Cedars, P. Q.....		30		93			
Cement laboratory.....		30		349			
Chambord, P.Q.....		20		94			
Chance Harbour, N.B.....		18					
Chapeau bridge, P. Q.....		29		344			
Chapel Pier, P.E.I.....		17		52			
Charleton, Ont.....				144			
Charlesville, N.S.....		14					
Charlottetown, P.E.I., public building.....		7, 32	8				
" " harbour.....		17		52			
Chase Point, N.B.....		19		61			
Chateauguay, P. Q.....		20		228			
Chateau Richer, P.Q.....		20					

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
C							
Chatham, N.B., public building..		7, 32	5				
" " harbour..		18		61			
" Ont., public building		9, 34	17				
" Ont.....				144			
Chaudiere bridges, Ottawa.....		29		343			
Cheggoggin Point, N. S.....		14		12			
Chesley, Ont., public building		9					
Chester, N.B.....		14		12			
Chéticamp, N.S.....		14		13			
Cheverie, N.S.....		14		13			
Chicot River, P.Q.....				228			
Chicoutimi, P.Q., public building..		8, 33					
" " harbour.....		20		94, 228			
" " telegraphs.....		29			21		
Chief Accountant's report		1					
" " staff.....		30					
" Architect's ".....		30					
" Engineer's ".....		30					
Chipman, N.B.....		19					
Chockfish, N.B.....		18		62			
Church Point, N.S.....		14		13			
Chute à Blondeau, Ont.....		21		145			
Chilliwack, B.C., public building		13					
Clarke City, P.Q.....		20		94			
Clarke's Harbour, N.S.....		14		13			
Clayoquot, B.C.....		26		180			
Clerk of Works, salaries.....		14					
Cifton, N.B.....		18		81, 190			
Clinton, Ont., public building.....		9, 34	17				
Coaticook, P.Q., public building.....		8, 33					
Cobourg, Ont., ".....		9	17				
" " harbour.....		24		145, 235			
Cockburn Island, Ont.....		24		145			
Colborne, Ont.....		24		146			
Colchester, Ont.....		24		146			
Colwood, B.C., telegraph office.....		37					
Colleraine, P.Q.....				95			
Collector of Revenue						1	
" slides and booms dues		28				1	
Collingwood, Ont.....		24		146 235			
" " public building.....		10					
Colpoy's Bay, Ont.....		24		146			
Columbia River, B.C.....		26		180			
Conrade Cove, N.S.....				17			
Conservation of waters.....	11			347			
Contrecoeur, P.Q.....		20					
Cookshire, P.Q., public building.....		8	9				
Coquitlam River, B.C.....				181			
Cornwall, Ont., public building		10, 31					
Correspondence							
Coteau du Lac, P.Q.....		20		96			
Coulange River, P.Q.....		28		338			
Courtney, River, B.C.....		26		181			
Courtney Bay, N.B.....		19					
Cow Bay, N.S.....		14		14			
" " River, N.S.....		14		14			
Cranberry Head, N.S.....		16		43			
Cranbrook, B.C., public building.....		13					
Crane Island, P.Q.....		20		100			
Crapaud, P.E.I.....		17		52, 193			
Cribbin's Point, N.S.....		14		14			
Cross Point, P.Q.....		20		96			
Cross Lake Rapids, N.B.....		19					
Croustown, N.S.....		16		36			
Crowe's Landing, Ont.....		24		147			
Culloden, N.S.....		14		15			
Cumberland, Ont.....		24		147			
" " B.C., public building		13	36				

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
C							
Cummings Cove, N.B.		18					
Curtis Landing		24		147			
D							
Dale, S. J. compensation		30					
Dalhousie, N.B.		18		62, 190			
" public building		8, 32					
Darcy Island, B.C., leper station		13					
Dark Channel, Ont.		26		236			
Dartmouth, N.S., public building		7, 32					
Dauphin, Man.		12, 36	33				
David's Cove, N.S.		14		15			
Davidson, N.W.T., immigration building		36					
Dawson, Y.T., public buildings		14, 37	39				
Dawson's Point, Ont.		24		147			
Deep Waterways Commission		30					
Deep Brook, N.S.		14		15			
Delaps Cove, N.S.		14		15			
Deputy Minister's report	1						
Deseronto, Ont., public building		10, 34	17				
Des Joachims bridge		29		344			
Detroit River, Ont.		24					
Devil's Island, N.S.		14					
Digby, N.S.		14		16			
" public building		7, 32					
Diligent River, N.S.		14		16			
D'Industrie, P.Q.				131			
Dorchester, N.B.		18		62			
Dorion, P.Q.				228			
Doucet's Landing, P.Q.		20		123			
Douglstown, P.Q.		20		96			
Dover, N.B.		18		63			
Dredging and plant	12	27		193, 328			
" British Columbia		27		325			
" Manitoba		26		318			
" Maritime Provinces		14		189			
" New Brunswick		18		190			
" Nova Scotia		14		189			
" Northwest Territories		26					
" Ontario		24		235			
" operations	11			188			
" plant, names, &c.				193, 328			
" Prince Edward Island		17		192			
" Quebec		20		228			
Drummondville, P.Q., public building		8, 33					
Dresden, Ont. public building		10					
Dry docks				334		14	
Dublin Shore, N.S.		14					
Dumoine River, Ont.		28	339				
Duncan River, B.C.				181			
Duncan, B.C., public building		13					
Duncan's Cove, N.S.		14					
Dundas, Ont., public building		10, 34					
Dundee, P.Q., custom house		8, 33					
Durham, N.B.		18		63			
" Ont., armoury		10	17				
Dyer Bay, Ont.		24		147			
E							
East Dover, N.S.		14		16			
" " N.B.		18					
Eastern passage, N.S.		15		17			
East Green Harbour, N.S.		15					
East Harrigan, N.S.		15		17			
East Jeddore, N.S.		15		17			
" Launcetown				17			

9-10 EDWARD VII., A. 1910

Names of Places, &c.	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7
	Page	Page	Page	Page	Page	Page	Page
E							
East Port Hébert, N.S.		15		17			
" River, (Sheet Harbour), N.S.		15		18			
East Templeton, P.Q.		20		97			
Eatonville, N.S.		15		18			
Echo Bay, Ont.		24					
Edgett's Landing, N.B.		18		63			
Edmonton, Alta., public buildings		12, 36	36				
" " bridge		29		346			
Edmonton, N.B.		18					
Edmunston, N.B.		19		63			
Elevator capacity	6						
Elmwood, Man., public building		12					
Elora, Ont., public building		10					
Emerson, Man., public building		12	33				
Emerson's Falls, N.B.		19		64			
Employees, graving docks.							41
" salaries of		30					41
" slides and booms.							37
Engineers, firemen, &c.							43
" staff, salaries, &c.							43
Englishtown, N.S.		15		18			
Escoumains, P.Q.		20					
Escuminac, N. B. telegraphs		29			17		
Esquimalt, B.C., graving dock		27		334		6, 14	
" " custom house		37					
Essex, Ont., public building		10					
Estevan, N.W.T., lands office		12, 36	35				
Expenditure	3	31					
F							
Fabre, P.Q.		20		97			
Fairville, P. Q.		8					
Fassett, P. Q.		20		228			
Father Point, P. Q.		20		97			
" " telegraphs		29					
Farnham, P.Q., public building		8					
Fenelon Falls, Ont.				148			
Fergus, Ont., public building		10					
Fernie, B.C., public building		13	37				
Flewelling's, N. B.		18		190			
Fort Dufferin, N.B.		19		64			
Fort Lawrence, N.S.		15					
Fort William, Ont.	6	24		148			
" " post office		10, 34	18				
Fourchu, N.S.		15					
Fox Island, N.S.		15		18			
Fraser River, B.C.		27		181			
Fraserville, P.Q., public building		8, 33					
" " harbour		22					
Frank, N. W. T., public building		12					
Franklin Point, P.E.I.		17					
Fredericton, N.B., public building		8, 32	6				
Freeport, N.S.		15		19			
French Cross, N.S.		16					
Fruhling dredge	12			325			
G							
Galt, Ont., public building		10, 34	18				
Gananoque, Ont., public building		10, 34					
Garthby, P.Q.		21		97			
Garden Island, Ont.				236			
Gardiner's Creek, N.B.		18		64			
Gaspereaux River, N.B.		18					
Gatineau Point, P.Q.				98			
" River, P.Q.				228			
" " slides		28		337			
Gaunce, N.B.		19		64			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
G							
Gelinas, Fred, gratuity.....		30					
Georgetown, P.E.I., public building.....		8	8				
Georgeville, N. S.....		15		19			
" P. Q.....		20		98			
Georgian Bay, Canal.....	10			351			
Gimli, Man.....		26		173			
Glace Bay, N. S., public building.....		7	3				
" harbour.....		15		19			
Glencoe, Ont., public building.....		10	19				
Goderich, Ont.....	8	24		149, 236			
" public building.....		10, 34	18				
Godefroy River, P. Q.....		22		117, 229			
Golden-Windermere, B.C. telegraphs.....		29			58		
Gore's Landing, Ont.....		24		149			
Graham's Pond, P.E.I.....		17		53			
Granby, P.Q., public building.....		8, 33					
Grand Anse, N.B.....		18		65			
Grand Bend, Ont.....		24		150			
Grand Etang, N. S.....		15		19			
Grand Falls, N. B.....		19		65			
Grande Greve, P. Q.....		20					
Grandes Bergeronnes, P. Q.....		22					
Grand Falls, N.B., P. office.....		8, 32					
Grand Forks, B.C., public building.....		13					
Grand Lake, N.B.....				65			
Grand Mechins, P. Q.....		20					
Grand Metis, P. Q.....		20					
Grand Narrows, N.S.....		15		20			
Grande Rivière de Beaulieu, P. Q.....		20					
" " Gaspé, P. Q.....		20		98			
Grand River, N.B.....		19		65			
Grande Vallée, P. Q.....		20					
Grass Cove, N.S.....		15		20			
Grassey Island, N.B.....		18		65			
Gratuities paid.....		30				10	
Graving docks.....	4						
" officials.....							
Great Salmon River, N.B.....		18		66			
Green Harbour, N.S.....				20			
Green Shoals, P. Q.....				229			
Gretna, Man., cattle quarantine.....		12					
Griffith's Island, Ont.....		24		150			
Grindstone, P. Q.....		21		98			
Grondines, P. Q.....		20					
Grosse Isle, P. Q., quarantine station.....		20	9	99			
Grosse Isle, P. Q., telegraphs.....		29			9, 51		
Guelph, Ont., public building.....		10, 34					
Gulf Shore, N.S.....		15		20			
Guysboro', N.S., public building.....		7, 32					
H							
Habitant River, N. S.....		15					
Haileybury, Ont.....		24		151			
Halifax, N. S., graving dock.....		15					
" public buildings.....		7, 32	4				
Haldimand, Ont.....		24					
Hallidays, P. E. I.....		17		52			
Halls Harbour, N. S.....		15		21			
Hamilton, Ont.....		24		151, 236			
" public buildings.....		10	18				
Hampton, N. S.....		15					
" N. B.....		18		190			
Hantsport, N. S.....		15		21			
Harbour au Bouche, N. S.....		15		21			
Harbourville, N. S.....		15		21			
Hardy Bay, B.C.....		27		182			
Harrissou, Ont., public building.....		10					

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
H							
Harvey, John gratuity..		30					
Havre du Rouisseau, P.Q.		20					
Harvey Bank, N.B.		18					
Hawkesbury, Ont., public building.		10, 34					
" Ont.		24		236			
Hawkestone, Ont.		24		151			
Head River, Ont.		24		151			
Heating, public building		32					43
Heron Island, N.B.		18		66			
Hickey's Pier, P.E.I.		17		53			
Higgin's Shore, P.E.I.		17		53			
High Falls, P.Q.				99			
Hilton, Ont.		24		152			
Hnausa, Man.				173			
Hochelaga, P.Q. public building.		8	12				
Hogan, Thos. gratuity		30					
Honora, Ont.		24		152			
Hopetown, P. Q.		20		99			
Houss Harbour, P.Q.		21					
Hudson, P.Q.		20					
Hull, P.Q., wharf.		20		100			
" public building.		8, 33					
Humboldt, N.W.T., lands office.		12, 36					
Hurds Point, P.E.I.		17		53			
I							
Iberville, P.Q.		21					
" public building.		8, 33					
Icelandic River, Man.		26		318			
Indian Brook, N.S.		16					
Indian Head, Sask. experimental farm		12, 36	35				
Indian Point, N.B.		19					
Ingersoll, Ont., public building.		10, 34					
Inverness, N.S.		15		22			
" public building.		7, 32					
Iroquois River, N.B.		19		66			
Isle aux Coudres, P.Q.		21		100			
" telegraphs		29					
Isle aux Foin, P.Q.		21		229			
Isle aux Grues, telegraphs		29					
Isle aux Noix, P.Q.		21		229			
Isle Perrot, P.Q.		21		100, 229			
Isle Verte, P.Q.		21		100			
" engineer's office		33					
Isaac Harbour, N.S.		15	52				
J							
Jeannette's Creek, Ont.		24		152			
Jersey Cove, P.Q.		21					
" N.S.		15					
Joggin's Mines, N.S.		15		22			
Johnston Harbour, N.S.		15		22			
Joliette, P.Q. public building.		8, 33	9				
Jordan Bay, N.S.		15					
Jordan, J. W. gratuity.		30					
Judique, N.S.		15		23			
Juniper Island, Ont.		24		153			
" " " public building.		10					
K							
Kaministiquia River, Ont.		20		148, 238			
Kamloops, B.C., public building.		13, 37					
" Okanagan, telegraphs.		29			30, 61		
Kamouraska, P.Q.		21					
Kearney, Ont.		24		153			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
K							
Kelly's Cove, N.S.		15		23			
Kennedy Flats, N.B.		19		66			
Kemptville, Ont.		10					
Kenora, Ont., public building.		10, 34					
Kentville, N.S., public building.		7, 32					
Kennington Cove, N.S.		15		23			
Ketch Harbour, N.S.		15		23			
Ketchum's, N.B.		19					
Kincardine, Ont.		24		153, 237			
" public building.		10	19				
Kingston, Ont., graving dock.	5	24		334		10, 16	
" harbour.	8	24		237			
" public buildings.		10, 34	19				
Kingston, N.B.		18		76			
Kingsville, Ont.		24		154			
Knowlton, P.Q.		21		101			
Knowlton's Landing, P.Q., public building.		8, 35					
Kootenay River, B.C.		27		182			
Kouchibouguac, N.B.		18		67			
L							
Lachine, P.Q.		21					
" public building.		8, 33					
Lachute, P.Q., public building.		8, 33	10				
Lacombe, N.W.T., experimental farm.		35					
Ladysmith, B.C., public building.		13	37				
Lafontaine, Sir L. H., monument.		30		24			
La Have Islands, N.S.		15		24			
" Channel.		15		189			
Lake Aylmer, P.Q.		21					
Lake Dauphin, Man.		26		173			
Lake Deschênes, P.Q.		21					
Lake Francis, Man.				318			
Lake Megantic, P.Q.		21					
" public building.		8					
Lake Nipissing, Ont.		24		154, 237			
Lake St. John, P.Q.		21		229			
Lakefield, Ont.				154			
Lakeport, Ont.		24					
Lake Timiskaming, P.Q.		26		347			
Lakevale, N.S.		16		45			
Lambton, P.Q.		21		101			
Lamèque, N. B.		18		67			
L'Anse à la Grosse Roche, P.Q.				102			
L'Anse aux Foies, P.Q.		23		127			
Laprairie, P.Q.		21					
" public building.		8, 33					
L'Ardoise, N.S.		15		24			
Larry's River, N.S.		15					
La Salette, P.Q.				102			
L'Assomption, P.Q., public building.		8, 33		229			
East Mountain Lake, N.W.T.		26		179			
La Tuque, P.Q.		21					
Laurencetown, N.S.		15					
Lavaltrie, P.Q.		21		102			
Leamington, Ont.		24		155			
" public building.		10	19				
Le Petit Debarkement, P.Q.		21					
Les Bergerennes, P.Q.				163			
Les Cuisses d'Alma, P.Q.				103			
Les Eboulements, P.Q.		21		103			
Les Ecu-reuils, P.Q.		21					
Les Escoumains, P.Q.				104			
Lesser Slave Lake, N.W.T.		26		179			
L'Etête, N.B.		18		191			
Lethbridge, N.W.T., public building.		12, 36					
Levis, P.Q., graving dock.		21		334		10, 15	

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
L							
Lévis, P.Q. harbour.....	9	21					
" public building.....		8, 33					
Lewis Point, P.E.I.....		17		54			
Lewis Wharf, N.S.....				189			
Lewis-Yukon River.....		27					
Lievre river, P.Q.....		22		230, 334			
Lighting, public buildings.....		32					
Limoilou, P.Q.....		23		104			
Lindsay, Ont., public buildings.....		10, 34					
Lion's Head, Ont.....		24		155, 237			
L'Islet, P.Q.....		21		104			
Listowel, Ont.....		10					
Litchfield, N.S.....		15					
Little Barachois, N.S.....		15		25			
Little Brook, N.S.....		15		25			
Little Current, Ont.....		25		237			
Little Forks, N.B.....				67			
Little Harbour, N.S.....		15		26			
Little Narrows, N.S.....		15		26			
Little Pabos, P.Q.....		21					
Little River N.S.....		15		26			
Little River, N.B.....		19		67			
Little River harbour, N.S.....		15					
Little River East, P.Q.....		21					
Little Sturgeon River, Ont.....		25					
Liverpool, N.S.....		15		189			
" public buildings.....		7, 32					
Livingstone's Cove, N.S.....		15		26			
Lloydminster, N.W.T., public building.....		12					
Lockport, N.S.....		15					
Loggieville, N.B.....		18					
London, Ont., public buildings.....		10, 34	20				
Long Island, N.B.....		18		68, 190			
Long Island, (St. John river).....		19					
Long Point, P.E.I.....		17					
Longueuil, P.Q., public building.....		8, 33					
L'Orignal, P.Q., public building.....		34					
L'Orignal, Ont.....		25		237			
Lorneville, N.B.....		18					
Lotbinière, P.Q.....		21		105			
Louisbourg, N.S.....		15		189			
Louiseville, P.Q.....		21		230			
Lower Caraquet, N.B.....				68			
Lower d'Escousse, N.S.....		16		37			
Lower Jordan Bay, N.S.....		15		26			
Lower Newcastle, N.B.....		18		68			
Lower Schmah, N.S.....		15		44			
Lower West Pubnico, N.S.....		15		27			
Lower Woods Harbour, N.S.....				27			
Lunenburg, N.S.....		15					
" public building.....		7, 32					
Mc							
McGowan (Sheffield), N.B.....		19		69			
McGregor's Creek, Ont.....		25		156			
McKay's Point, N.S.....		15		23			
McKellar's River, Ont.....				149-238			
McKinnon Harbour, N.S.....		15					
McNair's Cove, N.S.....		15		32			
McPherson's Cove, N.S.....		15		36			
" P.E.I.....		17		192			
McPherson, Angus, gratuity.....		30					
M							
Mabou, N.S.....		15		27			
Mace's Bay, N.B.....		18		69			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
II							
Macleod, Alta., public buildings.....		12, 36					
Madawaska River, N.B.....		18					
" Out., slides.....		28		337			
Magdalen Islands, P.Q.....		21					
" " telegraphs.....		29			9-47		
Magnetawan, Ont.....		25					
Magog, P.Q., public building.....		8	10				
Maguapit Lake, N.B.....		18-19		69			
Maguasha, P.Q.....		21		105			
Mabone Bay, N.S.....		15					
Main River, N.B.....		18		69			
Malbaie, P.Q.....		21		107			
Malignant Cove, N.S.....		15		28			
Manitoba, dredging.....				318			
Manitou Rapids, Man.....		26		174			
Manthorn's Cove, N.S.....		15		28			
Maple Creek, N.W.T., public building.....		12	35				
Marble Mountain, N.S.....		15					
Margaree Harbour, N.S.....		15		28			
" I-land, N.S.....		15		28			
" River, N.S.....		15		28			
Margaretville, N.S.....		15		29			
Maritime Provinces, telegraphs.....					8-43		
Maria, P.Q.....		21		105			
Marieville, P.Q., public building.....		8					
Markham, Ont., public building.....		10	20				
Marshall's Cove, N.S.....		16		40			
Martin's Brook, N.S.....		15		29			
Marysville, N.B., public building.....		7-32					
Mas-kinonge, P.Q.....		21					
Massey, Ont.....				155			
Masson, P.Q.....		21		106			
Matane, P.Q.....		21		106			
Mather's Island, N.B.....		19		69			
Matchedash Bay, Ont.....		25		243			
Mangerville, N.B.....		19		69			
Meaford, Ont.....		25		156-238			
" armoury.....		10					
Medicine Hat, Alta., public buildings.....		12	36				
Merigomish, N.S.....		15		29			
Metapedia Bridge.....		29					
Meteghan river, N.S.....		15		29			
Michipicoten, Ont.....		25					
Middle Country Harbour, N.S.....		16		30			
" River, N.S.....		16		30			
" West Pubnico, N.S.....		16		31			
Midland, Ont.....	7	25					
Mille Vaches, P.Q.....		21					
Mills Point, N.B.....		18		70			
Miminigash, P.E.I.....		17		54			
Minasville, N.S.....		15					
Minnedosa, Man., Dominion lands.....		36					
Minudie, N.S.....		16		31			
Miramichi River, N.B.....		18					
Mira River, N.S.....		16		31			
Miscellaneous.....	14	30					
Mispec, N.B.....		18					
Mispec, N.B.....		18		70			
Mission Point, P.Q.....		21		193			
" River, Ont.....				148-238			
Mistook, P.Q.....		21		106			
Mitchell, Ont., public building.....		10					
Moncton, N.B.....		18		70			
" public building.....		8-32					
Monk's Head, N.S.....		16		32			
Monetville, Ont.....				156			
Montague, P.E.I., public building.....		7-32	8				
Montebello, P.Q.....		21		230			

Names of Places. &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
M							
Montmagny, P.Q.		21		106			
" " public building		8-33					
Montreal River, Ont.		25					
" P.Q., harbour	8	21					
" " public buildings		8-33	10				
Monuments erected		20					
Moose Bay, P.Q.		21		107			
Moosejaw, Alta., public buildings		13					
Morden, N.S.		16		32			
Morel River, P.E.I.		17					
Morisson Cove, N.S.		17		32			
Moser River, N.S.		16					
Moss Glen, N.B.		18		191			
Mossy River, Man.		26		320			
Mount Forest, Ont., public building		10					
" Stewart, P.E.I.		17		54			
Mouth of Jemseg, N.B.		19					
Murphy, N.B.		18					
Murray, Jas., gratuity		30					
Murray Bay, P.Q.		21		107			
" Harbour, P.E.I.		17		192			
" River, P.E.I.		17		192			
Musquodoboit, N.S.		16					
Myncaster, B.C., custom house		13					
N							
Names of chief officers							33
Naas River, B.C.		27		183			
Nanaimo, B.C.		27					
" " public buildings		13, 37	37				
Nanaimo-Comox, telegraphs		29			59		
Nappan, N.S., experimental farm		7					
Napanee, Ont., public building		8, 34	20				
National Art Gallery, Ottawa							29
Natashquan, P.Q.		21					
Naufrage Point, P.E.I.		17					
Neepawa, Man., post office		12, 36	34				
Necuniteuch, N.S.		16		33			
Negro Point, N.B.		19		71			
Neguac, N.B.		18		71			
Nell's Harbour, N.S.		16		34			
Nelson, B.C., public building		13, 37					
Nepigon River, Ont.				156, 238			
New Brunswick, dredging		27		190			
" " harbours		18		58			
" " public buildings		7, 32	5				
" " telegraphs		29			46		
New Carlisle, P.Q.		21		107			
" west, P.Q.				108			
Newcastle, Ont.		25		238			
" " slides		28				5, 13	
Newcastle, N.B., public building		8					
Newfoundland, telegraphs		29			8		
New Glasgow, N.S.		16		34			
" " public building		7, 32					
New Liskeard, Ont.		25		239			
New London, P.E.I.		17		54			
Newport, P.Q.		21		108			
New Richmond, P.Q.		21		108			
New Westminster, B.C., public building		13, 37	37				
Niagara Falls, Ont., public building		10, 34	20				
Nicola-Penticton, B.C., telegraphs					58-64		
Nicolet, P.Q.		21		109, 230			
" " public building		8, 33					
Nictau Lake, N.B.		19		71			
Nigger Island, Ont.				157			
Nine Mile Creek, P.E.I.		17		55			

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
N							
Nipissing, Ont.....		25		157			
Nipigon River, Ont.....		25		156-238			
Noel, N.S.....		16		34			
Nominingué, P.Q., immigrant building.....		9, 33					
North Battleford, N.W.T., public building.....		13, 36					
North Bay, Ont.....		25		157			
" public building.....		10, 34	20				
North Cardigan, P.E.I.....		17		55			
North Head, N.B.....		18		72			
North River, N.S.....		16		35			
North Shore, N.S.....		16		35			
North Shore, St. Lawrence, telegraphs.....		29			9, 49		
North Sydney, N.S., public building.....		7, 32					
North Thompson, B.C., telegraphs.....		29					
Northwest Territories, buildings.....		12, 32	34				
" " bridges.....		29		346			
" " rivers.....		26					
" " telegraphs.....		29			9, 54		
Norway Bay, P.Q.....				108			
Notre Dame de la Salette, P.Q.....		21					
" du Portage, P.Q.....		21		109			
" du Laus, P.Q.....				109			
Nova Scotia, dredging.....		27		189			
" harbours.....		14		3			
" public buildings.....		7, 32	3				
" telegraphs.....		29			12		
O							
Oak Bay, N.B.....		18		191			
Oak Point, N.B.....		18		72			
Oakville, Ont.....		25		158			
Officers of the department.....							33
Okanagan River, B.C.....		27		183			
Old Man's River, N.W.T.....		26					
Ontario, bridges.....		29		343			
" dredging.....		27		235			
" harbours.....		24		137			
" public buildings.....		10, 34	16				
" telegraphs.....		29			9, 53		
Orangeville, Ont., public building.....		10, 35					
Orillia, Ont., public building.....		10, 35					
".....		25		158			
Oromocto, N.B.....		19		72			
Osborne, N.S.....		16		35			
Oshawa, Ont.....				158			
Oshawa, Ont., public building.....		10, 35	20				
Otonabee River, Ont.....				158			
Ottawa, Ont., public buildings.....	14	10, 35	21				
" experimental farm.....		10, 30	21				
" art gallery.....		10, 35					30
" buildings and grounds.....		10, 35					
" government house.....		10, 35	22				
" post office.....		10, 35	26				
" printing bureau.....		10, 35	26				
" river.....	10						
" Royal Mint.....		10, 35	27				
" slides and booms.....		28		336		3, 11	
" roads and bridges.....		29		343			
" streets, repairs.....		29	26				
Owl's Head, N.S.....		16		35			
Owen-Sound, Ont.....		25		239			
" " public building.....		10, 35					
Oyster Pond, N.S.....		16		35			
O'Neill, Angus, gratuity.....		30					

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
P							
Pacific cable tariff.....					37		
Papineauville, P. Q.....		21		230			
Paris, Ont., public building.....		11, 35					
Parker's Cove, N.S.....		16		35			
Parkhill, Ont., public building.....		11	29				
Parrsboro', N.S.....		16		36			
" buildings.....		7					
Parry Sound, Ont.....		25		159			
" " public building.....		11					
Partridge Island, N.B., quarantine.....		19		73			
Pasco, John, gratuity.....		30					
Paspébiac, P.Q.....		21		109			
Peleé Island, Ont.....		25		159-239			
" " telegraphs.....		29			9, 53		
Pembroke, Ont., public building.....		11, 35					
Penetanguishene, Ont.....		25		239			
Percé, P.Q.....		21		110			
Pereaux, N.S.....		16		36			
Peribonka, P.Q.....		22					
" immigration building.....		9, 33					
Perrys Point, N.B.....				191			
Petewawa, Ont.....		25		159			
" slides.....		28		338			
Peterborough, Ont., public buildings.....		11, 35	29				
Petites Bergeronnes, P.Q.....		22		110			
" Décharge, P.Q.....		22					
" Rivière, N.S.....		16		36			
" " Bonaventure, P.Q.....		22		110			
" " Est. P.Q.....				110			
" " Madeleine, P.Q.....		22					
Petit Rocher, N.B.....		18		74			
" Tourelle, P.Q.....		22					
Petrolia, Ont., public building.....		11, 35					
Piché Point, P.Q.....				111			
Pictou, Ont., public building.....		11, 35					
Pictou, Ont., harbour.....		25		239			
Pictou, N.S., public buildings.....		7	4				
Pictou Bar, N.S.....		16		189			
Pictou Island, N.S.....		16		37			
Pierreville, P.Q., public buildings.....		9					
Pike Creek, Ont.....		25		159			
Pink Rock, N.B.....		18		74			
Pitt River, B.C.....		27					
Pleasant Harbour, N.S.....		16		37			
Plessisville, P.Q., post office.....		9	13				
Pointe à Bronsseau, P.Q.....		22					
Pointe à Côte, P.Q.....		20					
Pointe à Elie, P.Q.....		21		111			
Pointe aux Esquimaux, P.Q.....		22		111			
Pointe aux Trembles, P.Q.....		22		111			
Pointe Claire, P.Q.....		22					
Point du Chêne, N.B.....		18		75			
Pointe Fortune, P.Q.....		22		112			
Pointe Levis, P.Q.....				230			
Pointe Maquereau, P.Q.....		22		112			
Pointe Piché, P.Q.....		22		111			
Point St. Charles, P.Q.....		22	10				
" " public building.....		9					
Point Edward, Ont.....		25		239			
" N.S., quarantine station.....		7					
Point Prim, P.E.I.....		17					
Point Wolfe, N.B.....		18		75			
Poirierville, N.S.....		16		37			
Poltimore, P.Q.....				112			
Pond Creek bridge, Ont.....				344			
Portage du Fort, Ont., bridge.....		29		344			
Portage du Fort, Ont., slides.....		28					
Portage la Prairie, Man., public building.....		12	34				

SESSIONAL PAPER No. 19

Names of Place, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
P							
Port Arthur, Ont.....	6	25		160-240			
" " public building.....		11, 35	30				
Port Bruce, Ont.....		25		240			
Port Burwell, Ont.....		25		160-240			
Port Burwell, Ont., engineer's office.....		35					
Port Colborne, Ont.....		25		160			
" " public building.....		11, 35					
Port Daniel, P.Q.....		22		112			
Port Darlington, Ont.....		24		141			
Port Elgin, Ont.....		25		240			
Port Greville, N.S.....		16		38			
Port Hastings, N.S.....		16					
Port Hawkesbury, N.S.....		16		38			
Port Hilford, N.S.....		16		38			
Port Hood, N.S.....		16		38			
Port Hope, Ont.....		25		161-240			
" " public building.....		11, 35					
Port Joli, N.S.....		16					
Port Latour, N.S.....				39			
Port Lewis, P.Q.....		22		113			
Port Lorne, N.S.....		16		40			
Port Maitland, N.S.....		16		40			
Port Morien, N.S.....		14		14			
Port Mouton, N.S.....		16					
Port Mulgrave, N.S.....		16		189			
Port Rowan, Ont.....		25		161			
Port Royal, N.S.....				10			
Port Selkirk, P.E.I.....				55			
Port Stanley, Ont.....		25		161, 240			
Port St. Francis, P.Q.....		22		230			
Port Williams, N.S.....		16		40			
Porter's Lake, N.S.....				37			
Portuguese Cove, N.S.....				40			
Poupore, P.Q.....		22					
Pownal, P.E.I.....		17		192			
Prescott, Ont., public building.....		11, 35					
" " dredging.....	8						
Prince Albert, Sask., public building.....		13, 36					
" " ".....				179			
Prince Edward, Island, dredging.....		27		192			
" " harbours.....		17		51			
" " public buildings.....		7, 32	9				
" " telegraphs.....		29					
Prince Rupert, B.C.....		13					
Printing and stationery.....		14					
Properties purchased and sold.....							22
Providence Bay, Ont.....		25		163			
Public buildings, Alberta.....		12, 36	36				
" British Columbia.....		13, 37	36				
" Manitoba.....		12, 36	33				
" New Brunswick.....		7, 32	5				
" Nova Scotia.....		7, 32	3				
" P.E.I.....		7, 32	8				
" Ontario.....		9, 34	16				
" Quebec.....		8, 33	9				
" Saskatchewan.....		12, 36	35				
" Yukon and generally.....	13	14, 37	39				
Public Works Agency, B.C.....		30					
Pubnice Head, N.S.....		16		41			
Pugwash, N.S.....		16		41			
Q							
Quaco, N.B.....		18		76			
" West, N.B.....				76			
Quatsino, B.C.....		27		183			
Qu'Appelle, N.W.T., telegraphs.....		29		27			
Quebec, dredging.....		27		228, 230			
" bridges.....		29		343			

Names of Places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
Q							
Quebec, harbours		20		84, 230			
" public buildings		8, 33	9				
" telegraphs		29			9		
" City, public buildings		9, 33	13				
" " harbour	9	22		113, 230			
Quoddy, Island, N.S.		16		41			
R							
Rabbit Island, N.S.		16		41			
Rainy River, Ont.		25					
Rays Creek, N.S.				42			
Recapitulation		31					
Red Deer, Alta., public buildings		13, 36					
" River, N.S.		16					
" " Man		26		174, 319			
Regina, Sask., public buildings		13, 36	35				
Reid's Point, N.B.		18		191			
Renfrew, Ont., public building		113					
Rented buildings, Ottawa		10					
Rents received					6, 17		
" paid		35					
Repentigny, P.Q.		22		114			
Revelstoke, public building		13					
Revenue	4						
Rexton, N.B.		18		76			
Richard's Landing, Ont.		25		163			
Richelieu river, P.Q.		22		114, 118			
Richibucto, N.B.		18		77			
" public building		8, 32	7				
Richmond, P.Q.		22		115			
" public building		9, 33					
Rideau Hall, Ottawa		10, 35	21				
Rigaud, P.Q.		22		231			
" armoury		33					
Rimouski, P.Q.		22		115, 231			
" public building		9, 33					
Rivière Ashouapmouchouan, P. Q.		22					
" Assiniboine, Man.		26					
Rivière à la Pipe, P.Q.		22		116			
Rivière aux Renards, P.Q.		22					
" " Vases, P.Q.				116			
Rivière Batiscan, P.Q.		22		231			
Rivière Bécancour, P.Q.		22					
Rivière Blanche, P.Q.		22					
Rivière Bonaventure, P.Q.		22					
Rivière Châteauguay, P.Q.		22					
Rivière Chicot, P.Q.		22					
Rivière des Bergeronnes, P.Q. ..		22					
Rivière des Petites Capucines, P. Q.		22					
Rivière des Vases, P. Q.		22					
Rivière Dorion, P. Q.		22					
Rivière du Lièvre, P.Q.		22		230, 334			
Rivière du Loup, P.Q.		22		116, 231			
Rivière du Sud, P.Q.		22		117			
Rivière Gatineau, P.Q.		22					
Rivière Girard, P.Q.		22		117			
Rivière Godefroy, P.Q.		22		117, 229			
Rivière Hébert, N.S.		16					
Rivière Jésus, P.Q.		22		232			
Rivière L'Assomption, P.Q.		22					
Rivière Maskinongé, P.Q.		22		232			
Rivière Otonabee, Ont.		25		158			
River Ottawa, Ont.		22					
" slides		28		236		3, 11	
Rivière Ouelle, P.Q.		22		117, 232			
Rivière Richelieu, P.Q.		22		114, 118			
Rivière Saguenay, P.Q.		22					
Rivière Saguenay, slides		28		342		5, 13	

SESSIONAL PAPER No. 19

Names of Places., &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
R.							
Rivière Sanlt au Mouton, P.Q.		23					
Rivière St. Charles, P.Q.				119			
Rivière St. Francis, P.Q.		22		232			
Rivière St. James, P.Q.				119			
River St. John, N.B.		18		78, 190			
River St. Lawrence, Ont.		25		165			
Rivière St. Louis, P.Q.		23		119			
Rivière St. Maurice, P.Q.		23		341			
River Thames, Ont.		25		242			
Rivière Trois Pistoles, P.Q.		23		120			
Rivière Vapenr, P.Q.		23		120			
Rivière Verte, P.Q.		23		121			
Roads and Bridges.		29		343			
Robert's N.B.		19					
Roberval, P.Q.		23		121			
" P.Q., public building.		9					
Robillard, Belivar, gratuity.		30					
Robin's Landing, Ont.		25		163			
Robinson's, Island, P.E.I.				55			
Roches Point, Ont.		25		163			
Rockland, Ont.		25		241			
Rodney Slip, St. John, N.B.		19					
Rondeau, Ont.		25		164, 241			
Rosseau, Ont.		25		164			
Rossland, B.C., public building.		13, 37	37				
Rosspout, Ont.		25		164			
Rothsay, N.B.		19		78, 191			
Round Hill, N.S.		16		42			
Ruisseau à Patates, P.Q.		23					
" à Sem, P.Q.		23		122			
" Leblanc, P.Q.		23		122			
Ruscombe River, Ont.		25		241			
Rustico, P.E.I.		17		55			
St.							
St. Alexis, P.Q.		23		122			
St. Alphonse de Bagotville, P.Q.		23		122			
St. André de Kamouraska, P.Q.		23					
St. Andrews, P.Q.		23					
St. Andrews, N.B.		19		78, 191			
St. Andrews, Rapids, Man.		26		174, 319			
St. Angèle de Laval, P.Q.		20		123			
Ste. Anne de Bellevue, P.Q., pub. building.		34					
Ste. Anne de Chicoutimi, P.Q.		23					
Ste. Anne de la Perade, P.Q.		23		123			
Ste. Anne de la Pocatière, P.Q.		23					
Ste. Anne des Monts, P.Q.		23		123			
Ste. Anne de Sorel, P.Q.				123			
Ste. Anne de Sabrevois, P.Q.		23					
Ste. Anne du Saguenay, P.Q.		23		124			
St. Blaise, P.Q.		23					
St. Catharines, Ont., public building.		11, 35	30				
St. Charles Borromée, P.Q.		23		124			
St. Charles de Caplan, P.Q.		23		124			
St. Charles de Limoilou, P.Q.		23		104			
St. Charles de Richelieu, P.Q.		23		124			
Ste. Coeur de Marie, P.Q.		21		106			
St. Croix, P.Q.		23		124			
St. Didace, P.Q.		23					
St. Edouard des Méchins, P.Q.				125			
St. Eloi, P.Q.		23		125			
Ste. Emclie, P.Q.		23		126			
St. Eustache, P.Q., public building.		9					
Ste. Famille, P.Q.		23		126			
St. François d'Orléans, P.Q.		23		126			
St. Fulgence, P.Q.		23		127			
St. Gabriel de Brandon, P.Q., post office.		13, 34					

Names of Places, &c.	Part 1 Page	Part 2 Page	Part 3 Page	Part 4 Page	Part 5 Page	Part 6 Page	Part 7 Page
S							
St. Gédéon, P.Q.		23		127			
St. George, N.B.		19		28, 191			
St. Godefroy, P.Q.		23		127			
St. Henri, P.Q., post office.		9, 34	11				
St. Hilaire, P.Q.		23		127			
St. Hyacinthe, P.Q., public building.		9, 34					
St. Ignace de Loyola, P.Q.				128			
St. Jacques de l'Achigan, public building.		9					
St. Jean des Chaillons, P.Q.		23		128, 233			
St. Jean, d'Orléans, P.Q.		23		128			
St. Jérôme, P.Q.		23		129			
" public building.		9, 34					
St. John, N.B.	9	19		79, 190			
" public buildings.		8, 32	6				
St. Johns, P.Q.		22		233			
" public buildings.		9, 34	15				
St. Joseph d'Alma, P.Q.		21					
St. Joseph de Letellier, P.Q.		23		129			
St. Joseph, Ont.		25		165			
St. Lambert, P.Q.		23					
St. Laurent d'Orléans, P.Q.		23		129			
St. Laurent, Mau.		26		178			
St. Lawrence Pavillons, Ont.				165			
St. Louis du Mile End, P.Q., post office.		9	11				
St. Louis, N.B.		19		80			
St. Mary's Bay, P.E.I.		17		56			
St. Mary's, Ont., public building.		11, 35	30				
St. Mary's River, N.S.		16		42			
St. Mathias, P.Q.		23					
St. Maurice River, P.Q.		23		233			
" slides		28		341		4, 12	
St. Michel, P.Q.				129			
St. Michel de Bellechasse, P.Q.		23					
St. Nicholas, P.Q.		23		130			
St. Omer, P.Q.		23		130			
St. Paul, N.B.		19					
St. Paul de Joliette, P.Q.				131			
St. Paul de l'Isle aux Noix, P.Q.				131			
St. Peter's Bay, P.E.I.		17		56			
St. Pierre les Becquets, P.Q.		23		131, 233			
St. Placide, P.Q.		23		233			
St. Prime, P.Q.		22					
St. Roch, P.Q., post office.		9	15				
St. Siméon, P.Q.		23		132			
St. Stephen, N.B., public building.		8, 33					
St. Sulpice, P.Q.		23		132			
St. Thérèse, P.Q., public building		9					
St. Valentin, P.Q.				131			
St. Zotique, P.Q.		23		131			
S							
Sabrevois, P.Q.				133			
Sackville, N.B.		19					
Saguenay, P.Q., slides		28		342		5, 13	
" telegraphs.		29			49		
" river.		22		233			
Salmon Arm, B.C.		27		183			
" River, N.S.		16		37			
Sanford, N.S.		16		43			
Sand Point, N.B.		19					
" Ont.		25		165			
Sandwich, Ont., public building.		11, 35					
Sandy Cove, N.S.		16					
Sarnia, Ont., public building.		11, 35	30				
" harbour.		25		241			
Saskatoon, Sask., public building.		13, 36	35				
Saskatchewan, public buildings.		12, 36	35				

SESSIONAL PAPER No. 19

Names of places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
S							
Saskatchewan telegraphs.....		29					
Saugen River, Ont.....				166			
Saulnierville, N.S.....		16		43			
Sault Ste. Marie, Ont.....		25		166, 241			
Sault Ste. Marie, Ont., public building.....		11, 35	39				
Scotch Cove, N.S.....		17		50			
Scotchtown, N.B.....		19					
Scotia Cove, N.S.....		16		43			
Seagull, Ont.....		25		166			
Seaforth, Ont., public building.....		11					
Seal Cove, N.B.....		19					
Sealeys Cove, N.B.....		19		191			
Seal Harbour, N.S.....		15					
Sea Rock, P.Q.....		23					
Secretary, staff, salaries.....		30					
Sedgwick, N.W.T., immigration building.....		37					
Selkirk, Man.....		26		178			
" public building.....		12	34				
Selma, N.S.....		15		44			
Severn River, Ont.....		25		166			
Shediac, N.B.....		19		75			
Sheguinah, Ont.....		25		167			
Shelburne, N.S., public building.....		7, 32	4				
Shellmouth, bridge, N.W.T.....		29		346			
Sherbrooke, P.Q., public building.....		9, 33	15				
Sherbrooke, N.S.....		16		190			
Shigawake, P.Q.....		23		133			
Ship Harbour, N.S.....		16					
Shippigan Harbour, N.B.....		19		81			
Shippigan Gully, N.B.....		19		80			
Short Beach, N.S.....		16		44			
Shrewsbury, Ont.....		25		167			
Sidney, B.C.....		27		183			
Silver Centre, Ont.....		25		167			
Simeoe, Ont., public building.....		11	39				
Sinclair, James, gratuity.....		30					
Sissons Flat, N.B.....		19		81			
Skeena River, B.C.....		27					
Skinner's Cove, N.S.....		16		44			
Slides and booms.....	4	28		336		3	
" " dues.....						3	
" " officials.....							37
Smith's Falls, Ont., public building.....		11, 35					
Sooke Harbour, B.C.....		27		184			
Sorel, P.Q.....		23		139, 233			
" public buildings.....		9, 33					
Souris, P.E.I.....		17		56, 193			
" public building.....		7, 32	8				
Souris, Man., post office.....		12					
Southampton, Ont.....		25		168			
South Ingonish, N.S.....		16					
South Lake, N.S.....		16		45			
South Nation River, Ont.....		25		168			
South River, Ont.....		25					
Spallumcheen, B.C.....		27		184			
Spanish River, Ont.....		25		241			
Sparrow Lake, Ont.....		25					
Springhill, N.S., public building.....		7, 32	4				
Spry Harbour, N.S.....		16		45			
Squateck, P.Q.....		23		134			
Stanley Island, Ont.....				169			
Stettler, N.W.T., immigration building.....		13, 37					
Stickine River, B.C.....		27		184			
Stonehaven, N.B.....		19		81, 199			
Storage of waters.....	10			347			
Stratford, Ont., public building.....		11, 35	30				
Strathcona, N.W.T., public building.....		13, 36					
Strathroy, Ont., public building.....		11, 35	30				

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
S							
Sturgeon Falls, Ont., public building.....		11					
" P.E.I.....		17					
Sndbury, Ont., public building.....		11					
Summerside, P.E.I., public building.....		7, 32	8				
" harbour.....		17		57			
Sumnerstown, Ont.....		26		242			
Summerville, N.S.....		16		45			
Superintendent of Telegraphs.....					1		
Surveys and Inspections.....		30		3			
Sussex N.B., public building....		8, 33	7				
Swan Lake, Man.....		26		319			
Swift Current, N.W.T., immigration bdg.....		13, 37					
Sydenham River, Ont.....		26		169			
Sydney, N.S.....		16					
" public building.....		7, 32	4				
Sydney Mines, N.S., public building.....		7, 32					
T							
Tabacintac, N.B.....		18					
Tadousac, P.Q.....		23		135			
Tancock Island, N.S.....		16		45			
Tangier, Harbour, N.S.....		16		45			
Tariff, telegraph lines.....					37		
Technical books of reference.....		30					
Telephones.....					11		
Telegraph lines, generally.....					5		
" " reports.....					1		
" " revenue.....					10		
" " staff.....		30			4, 12		
Tenby Bay, Ont.....		26		169			
Tenecape, N.S.....		16					
Terrebonne, P.Q.....		23					
" public building.....		9, 34					
Thames River, Ont.....				170, 242			
Thessalon, Ont.....		26		170			
Thetford Mines, P.Q., public building.....		9, 34					
Thompson River, B.C.....		27					
Thorah Island, Ont.....		26					
Thornbury, Ont.....		26		242			
Three Fathom Harbour, N.S.....		16		46			
Three Rivers, P.Q.....		23		234			
" public buildings.....		9, 34					
Tiffin, Ont.....		25		242			
Tilsonburg, Ont., post office.....	7	11					
Tignish, P.E.I.....		17		57			
Tignish, N.S.....		16					
Tobermora, Ont.....		26		170			
Toney, River, N. S.....		16		46			
Toronto, Ont.....		26		170, 242			
" public buildings.....		11, 35	31				
" Junction, Ont., post office.....		11, 35					
Total expenditure of Department.....		31					
Tracadie, N. B., Lazaretto.....		8, 33	7				
Tracadie, ".....		19		82			
Tracadie Harbour, N.S.....		17		47			
Traverse, N. B.....		19		192			
Treadwell, Ont.....		26		171			
Trenton, Ont.....		26					
" N. S.....		17					
" Ont., public building.....		11, 35					
Trois Pistoles, P.Q.....		23		135			
Trout Cove, N.S.....				47			
" River, N.S.....		17					
" " N.B.....		19		82			
Truro, N.S., public building.....		7, 32	5				
Tupperville, N.S.....		17		47			
Tynemouth Creek, N. B.....		19		82			
Tyrian S.S. Cable Ship.....		29			9		

SESSIONAL PAPER No. 19

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
U							
Uncollected dues, slides and booms.....						9	
Union Bay, B.C.....		27		185, 326			
Upper Gagetown, N.B.....		19					
Upper Granville, N.S.....				42			
Upper Jemseg, N.B.....		19					
Upper Lillooet, B.C.....		27		185			
Upper Ottawa River.....		26					
Upper Port Latour, N.S.....		17					
Upper Prospect, N.S.....		17		48			
Upsalquitch River, N.B.....		20		83			
Uxbridge, Ont., public building.....		11, 35					
V							
Valleyfield, P.Q., public building.....		9, 34					
" " dredging.....		23					
Vancouver, B.C.....		27		185			
" " public buildings.....		13, 37	37				
Vancouver-Salt Spring, telegraphs.....		29					
Varennes, P.Q.....		23		135			
Vasseur, N.B.....		19		83			
Vaudreuil, P.Q.....		23		135, 234			
Verdun, P.Q.....		23		234			
Vermilion, N.W.T., immigration building.....		13, 36					
Vernon, B.C., public building ..		13					
Vernon River, P.E.I.....		17					
Victoria, P.E.I.....		17		52, 193			
" B.C.....		27		186			
" " public buildings.....		13, 37	38				
Victoria-Cape Beale, telegraphs.....		29			59		
Victoria-Williams Head, telegraphs.....		29					
Victoria Harbour, Ont.....	7	26		242			
Victoriaville, P.Q., public building.....		9, 34					
Vigreville, N.W.T., immigration building.....		13, 36					
Ville Marie, P.Q.....				234			
Villeneuve, P.Q.....		23					
Virden, Man., immigration building ..		36					
W							
Walkerton, Ont., public building.....		11, 35	31				
Wallace, N.S.....		17		48			
Wapsehegan, N.B.....		19		83			
Washago, Ont.....		26					
Washabuck, N.S.....		17		49			
Water's N.B.....		19		83			
Waterloo, Ont., public building ..		11, 35					
Waterloo, N.B.....		19					
Waubashene, Ont.....				243			
Welchpool, N.B.....		19		84			
Welland, Ont., public building.....		11, 35	31				
West Advocate, N.S.....		17					
West Berlin, N.S.....		17		49			
Westbourne, Man.....		26					
West Farnham, P.Q., public building.....		34					
Western Head, N.S.....		17		49			
West Head, N.S.....		17		49			
Westford, N.S.....		17					
West Point, P.E.I.....		17		57			
West Port Joli, N.S.....				50			
Westville, N.S., public building.....		7	5				
Wetaskawin N.W.T., public building.....		13					
Wheat production.....	6						
Whitby, Ont., Harbour.....		26		172			
" " public building.....		11, 35	32				
Wreck Cove, N.S.....		17		32			
Wrights, N.B.....		19					

Names of Places, &c.	Part 1.	Part 2.	Part 3.	Part 4.	Part 5.	Part 6.	Part 7.
	Page	Page	Page	Page	Page	Page	Page
Y							
Yamachiche, P.Q.....		23		234			
Yamaska River, P.Q.....		24		234			
" " lock and dam.....		24		334			
Yarmouth, N.S.....		17		51, 189			
" " public building.....		7, 32					
York Point (St. John), N.B.....		19					
Yorkton, Sask., public building.....		13, 37	36				
Yukon, public buildings.....		14, 37	39				
" " telegraphs.....		29		9, 65			

PART I

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED MARCH 31

1909

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE

FISCAL YEAR ENDED MARCH 31, 1909

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, September 20, 1909.

Hon. WILLIAM PUGSLEY,
Minister of Public Works of Canada,
Ottawa.

SIR,—I have the honour to submit, herewith, a report of the operations of the Department of Public Works for the fiscal year ended March 31 last.

EXPENDITURE.

The total expenditure incurred by the department during the year 1908-9 amounted to the sum of \$14,784,739.39, charged as follows:—

Capital.. . . .	\$ 1,867,346 01
Income.. . . .	12,292,359 15
Revenue.. . . .	625,034 23

And classified under the different heads

Harbours and rivers.. . . .	\$ 3,305,920 32
Dredging.. . . .	4,547,773 43
Slides and booms.. . . .	137,086 57
Roads and bridges.. . . .	49,106 26
Public buildings.. . . .	5,845,286 70
Telegraphs.. . . .	535,480 12
Miscellaneous.. . . .	364,085 99

Total.. . . . \$14,784,739 39

The foregoing statement evidences the continued expansion of the work of the department. As the population increases and the services of the various departments of the government are extended, a demand is created for improved and more adequate

9-10 EDWARD VII., A. 1910

accommodation in the form of public buildings, while the gratifying growth of the trade and commerce of the country renders absolutely necessary a large and constantly increasing expenditure to provide proper harbour and navigation facilities.

REVENUE.

The total revenue for the year reached the sum of \$299,437.88, sub-divided as follows:—

Slides and booms.. . . .	\$ 76,455 41
Graving docks.. . . .	60,505 16
Rents.. . . .	23,268 44
Telegraph lines.. . . .	113,175 34
Casual revenue.. . . .	26,033 53
Total.. . . .	<u>\$299,437 88</u>

It is remarkable that this amount is almost identical with the collections of last year, exceeding them by only the very small sum of \$7.70. A falling off is noticeable in three divisions, slides and booms, graving docks and telegraph lines, but the amounts collected for rents and received from casual revenue have been augmented, making up the difference.

The revenue derived from slides and booms is subdivided as follows:—

Ottawa district.. . . .	\$40,390 99
St. Maurice district.. . . .	34,365 86
Newcastle district.. . . .	1,480 96
Saguenay district.. . . .	1,533 30
Total.. . . .	<u>\$77,771 11</u>

which represents a decrease of \$16,522.42 from the revenue of the last fiscal year, due principally to the large quantity of saw logs hung up in consequence of the unprecedentedly low water.

The following were the sources of revenue from graving docks:—

Esquimalt.. . . .	\$20,583 36
Kingston.. . . .	10,693 84
Lévis.. . . .	29,227 96
Total.. . . .	<u>\$60,505.16</u>

which is \$2,703.42 less than the preceding year. It may be said, however, that the shortage in graving dock revenue is not an altogether regrettable feature, as it means fewer accidents to vessels and consequently smaller loss to the shipping interest. It will be remembered that on the withdrawal of the Pacific Squadron in 1905, the revenue at the Esquimalt graving dock had dropped as low as \$4,632.54, since when, however, the dock has been doing a fairly good commercial business.

The increase in Canadian Lake Marine during the past few years has rendered absolutely necessary the construction of more and larger docks. With a view to encouraging private enterprise in this direction, an Act was passed during the session

SESSIONAL PAPER No. 19

of 1903 whereby an annual subsidy of 3 per cent for a period of twenty years on the cost not to exceed \$1,000,000 might be paid to any company constructing a dry dock in accordance with plans first submitted to and approved by the Department of Public Works. During the session of 1908-9 an amending Act was passed making such subsidy payable on a sum not exceeding \$1,500,000. The first company to take advantage of the provisions of this Act was the Vancouver Dry Dock and Shipbuilding Company, with which the department entered into an agreement on the 31st day of May last for the construction of a floating dock in the harbour of Vancouver, having a length of 486 feet by 66 feet in width, with a tonnage of 11,000. The dock will be constructed in England by the well-known dock and shipbuilding firm of Swan & Hunter, and shipped in knockdown condition to Vancouver. Two other applications for subsidies are at present under consideration by the department, one from the Sault Ste. Marie Dry Dock and Shipbuilding Company, for the construction of a graving dock and shipbuilding and repair plant at Sault Ste. Marie, Ont., and the other from the Thunder Bay Dry Dock and Shipbuilding Company, for the erection of a floating dock at Port Arthur, Ont.

In this connection it may be mentioned that for some time the shipping interests have felt the need for a dock with thoroughly equipped repair plant on the lower lakes. The Kingston graving dock was constructed at a time when chartered companies would not build a dock. It has served its purpose up to the present, but of late years there has arisen a pressing demand for improved facilities.

It is well known that United States docks and shipyards have absorbed a good part of the business which would naturally come to Kingston if a satisfactory repair plant were installed. It is felt that the time has come when a private company, if in control of this dock, by establishing a modern repair and shipbuilding plant, would satisfy the demands of the shipping trade on the lakes and canals.

Business could then be solicited, special arrangements as to charges could be made and the dock and accessories could be handled more economically. A proposition to lease the dock has accordingly been receiving most careful consideration with the result that it has been decided to call for tenders for a twenty-one years' lease, subject to the requirements of the Dry Dock Act and conditional on the establishment by the lessee of a suitable repair plant capable of taking care of the largest vessels which could be accommodated by the dock.

HARBOURS AND RIVERS.

The expenditure in this field of departmental operation, as has been noted above, amounts to \$7,853,693.75, including dredging, this sum being expended under the direction of the Chief Engineer and his capable staff of assistants throughout the Dominion.

Works of improvement, exclusive of dredging, have been carried on at 759 different points in the Dominion of Canada, from the Atlantic to the Pacific, comprising the construction of wharfs, piers, breakwaters, dams, bridges, &c., and their repair and

9-10 EDWARD VII., A. 1910

re-construction, a full account of which will be found in Part IV (4) of this report, which contains a description of each work, with details as to its character, purpose, extent and cost.

To this branch of the department is entrusted the improvement of Canada's system of water transit along the 1,500 miles of navigation which stretches from Montreal, an ocean port, to Port Arthur and Fort William, the head of lake shipping. The department is bending its energies to so improve Canadian harbours on the Great Lakes that the railways may avail themselves to the fullest extent of the Canadian route with its great natural water stretches, in conveying to ocean vessels the product of the vast western wheat fields. A gratifying measure of success has already attended the efforts put forth: even under present conditions the Canadian route is asserting its superiority and, as the improvement of what have now become national ports in Canada's transportation system continues, bringing them nearer and nearer to a state of full efficiency, it will inevitably become the supreme grain route.

The following comparative statement for the past six years of the acreage under wheat cultivation in the west and the annual yield illustrates the magnitude of the business to be handled:—

	Acres.	Bushels.
1903..	3,280,107	56,145,497
1904..	3,334,667	56,037,995
1905..	3,881,199	84,175,226
1906..	5,049,250	102,789,864
1907..	5,045,177	72,016,402
1908..	6,813,020	105,613,454

During the present year, a proportionately large acreage has been broken and conservative estimates place the yield at 115,000,000 bushels.

For the storage and handling of the western crop there were, during the season of 1903, 1,341 interior elevators, 36 warehouses and 13 terminal elevators having a total capacity of 58,535,700 bushels. On the Canadian Pacific Railway there were 919 elevators, 25 warehouses having a total capacity of 28,752,000 bushels; on the Canadian Northern Railway, 358 elevators, 11 warehouses with a capacity of 10,231,000 bushels; on the Midland Railway and the Brandon, Saskatchewan and Hudson Bay Railway, 18 elevators with a capacity of 520,000 bushels; on the Alberta Railway and Irrigation Company, 10 elevators with a capacity of 274,000 bushels; Ontario Terminal elevators, Canadian Pacific Railway, 11 elevators with a capacity of 11,758,700 bushels, and the Canadian Northern Railway, 2 elevators with a capacity of 7,000,000. During the past season, additional elevators have been constructed along the line of the new Grand Trunk Pacific Railway, which is now in operation to within 115 miles of Edmonton, as well as along the older railroads. The shipments of grain by vessels from Fort William and Port Arthur increased from 28,444,645 bushels in 1905 to 47,743,336 bushels in 1908, and the all-rail shipments show a still more remarkable increase, viz.: from 2,528,693 bushels in 1905, to 14,364,177 bushels in 1908.

SESSIONAL PAPER No. 19

These ports being naturally the spout through which the immense crop of the west finds its outlet, have claimed a special measure of attention from the department and will necessarily continue to do so for several years to come. The extensive dredging operations being carried on under contract with the Great Lakes Dredging Company have progressed most satisfactorily, a total of 2,833,607 cubic yards of material having been removed from April 23rd to December 4th, when the plant was laid up in winter quarters. On the 27th April last a further contract was entered into with the above-mentioned firm for the excavation of a basin at the mouth of the Mission river, which will form the lake terminus of the Grand Trunk Pacific Railway. Around this basin a quay wall will be in due course constructed, with the necessary slips for the accommodation of vessels receiving and discharging cargoes.

Early this season, on representations from the Board of Trade of Winnipeg, the local boards of trade and business and railway interests, the question of the further deepening of the channel in the Kaministiquia and Mission rivers to 25 feet was carefully studied, with the result that the work of increasing the depth and width of the channel and basins, beyond what it was originally determined upon, has been undertaken, it having been found that the larger grain vessels now engaged in the carrying trade were seriously handicapped in moving from elevator to elevator when partially loaded, twenty-two feet of water not being sufficient to afford them adequate steerage way.

From Fort William and Port Arthur, the bulk of the grain for the crop year goes by vessel to the Georgian Bay ports, Kingston and Montreal. The harbours on the Georgian Bay have now a combined elevator capacity of 7,499,000 bushels, four million of which is at Midland and Tiffin. At Victoria harbour, the Canadian Pacific Railway has now under construction a large terminal elevator which it is expected will be ready and thoroughly equipped for the handling of grain by the summer of 1910. The two great lines of railway, the Grand Trunk and Canadian Pacific, have decided upon the development of the two terminals, Tiffin and Victoria harbour, respectively, for the accommodation of this traffic, and the department is carrying on extensive dredging operations at both these ports, under contract with the Canadian Construction Company, which are progressing rapidly and satisfactorily. At Tiffin, a slip has been dredged sufficient to permit the largest lake vessel in the grain-carrying trade to discharge her cargo at the new two-million bushel Grand Trunk Railway elevator. Up to September 1st, 1909, 4,000,000 bushels of grain had been received at the two elevators, the Aberdeen and the Grand Trunk, and 2,000,000 bushels at Midland.

At Victoria harbour, three dredges have been at work, with an average daily output of 5,000 yards. A slip of 600 feet wide, 25 feet deep and practically 5,000 feet long should be completed, according to the original plan, early next season, which will be in advance of the completion of the elevator and freight sheds of the Canadian Pacific Railway. Both the above mentioned harbours are being developed in accordance with a comprehensive plan and to a corresponding depth, namely: 25 feet, to those at the head of navigation on Lake Superior. These ideal conditions for water shipment, taken in conjunction with the double lines of railway with a four-tenths of one per

9-10 EDWARD VII., A. 1910

cent grade, recently constructed between these harbours and the main lines of the Grand Trunk Pacific and Canadian Pacific railways, afford an exceptionally favourable route.

Along with the Georgian Bay ports, to which reference has been made, a marked increase in traffic is also rapidly developing at Goderich, which has now two elevators with a combined capacity of 700,000 bushels and a considerable quantity of grain is now being handled for local consumption by mills in the western part of the province. Located on the harbour front, is one of the largest flour mills in Canada, capacity being 1,200 barrels a day. Dredging has been performed with a view to improving the entrance to this harbour and strong representations have been received urging further work in the inner harbour to provide the necessary berthing facilities for vessels.

Kingston and Prescott have an elevator capacity of 1,506,000 bushels and 1,000,000, respectively, while the capacity at Montreal is 4,081,000 bushels. The capable commission in charge of the latter port are manifesting great energy and unflagging interest in its development into a world port. It is the only North American port affording access to ocean vessels of 16,000 tons from which transshipment can be made into inland coasting vessels carrying 2,000 tons of cargo. Situated 1,000 miles from the sea, deep-water navigation stretches inland a distance of 1,500 miles further. The tonnage of the port has doubled within the last five years and in general volume of business it is now excelled only by the port of New York. The upper and central portions of the harbour are now fully occupied, but there are unlimited possibilities in what is called the eastern section, extending below St. Mary's Current, down to Longue Pointe and, if necessary, as far as Pointe aux Trembles. A beginning in this development was made in the summer of 1900, when a contract was entered into with Messrs. Poupore & Malone for the construction of a high level pier in the lower division of Montreal harbour. The pier was completed in the year 1907, and is 1,000 feet long on the upper or western face, 850 feet on the opposite face, with a width at coping level of 270 feet. Its top stands 23 feet above extreme low water level and the depth along its face is 30 feet at the same stage of water. As stated above, this was only the beginning of a much more comprehensive scheme of port development on broad national lines which is now engaging the earnest consideration of the commission. During 1908, the Chairman of the commission and its Chief Engineer made an inspection of the principal British and continental ports, the result of which forced the conclusion that Montreal was ideally situated from the point of view of European transportation, the only drawback being the winter season. The preparation of extensive plans to increase the facilities of the port and provide for the increased business were immediately undertaken. For the study of the proposed scheme of extension, engineers of the Department of Marine and Fisheries and Public Works were called in and have rendered valuable assistance. Montreal is fortunate in the fact that the entire foreshore is public property, so that whatever scheme of enlargement is finally decided upon to render more efficient the economical transfer of goods between the various systems of inland transportation and ocean vessels is certain of accomplishment with the minimum of expenditure.

SESSIONAL PAPER No. 19

During the year, the work under contract with the Etienne Dussault Company, Limited, at Quebec has been pushed with vigour. It consists of the construction of an extension, in a northerly direction, to the breakwater built many years ago on the river front of the harbour of Quebec. The length of the extension is 1,460 feet along the St. Lawrence and a return face of 200 feet at the northern end, the back of the crib work and concrete being filled with dredged material for a depth of 150 feet. The work is used for the landing of passengers and freight by the 'Empress' steamers of the Canadian Pacific Steamship Company. A temporary freight shed 450 feet long by 80 feet wide was constructed in the year 1906 to give traffic accommodation pending the construction of permanent sheds, and during the present season a second temporary shed is being erected.

On the opposite side of the river at Lévis, the department has purchased what is known as the Carrier-Lané property with a view to the construction of a deepwater wharf which will provide additional accommodation for the increasing St. Lawrence trade. Plans for this work are now in course of preparation and the department will, in all probability, be in a position to issue a call for tenders during the coming winter.

St. John, N.B., occupies a unique place among Canadian ports, in that until the last few years it has been self-developed. This harbour was conferred upon the corporation by the Crown by charter dated 18th May, 1785, since when all harbour works have been carried out directly by or under arrangement with the city, the latter levying dues for the upkeep of the port. Of late years the government, at the request of the city, has come to its assistance and has performed extensive dredging to provide foundations for wharfs under construction by the city, as well as the deepening of the slips to 32 feet at low water for the accommodation of the large 'Empress' steamers and Allan Liners which make St. John their winter terminus. In addition to the dredging, the department has now undertaken construction work, a contract having been entered into on the 24th November, 1908, with D. C. Clark for the construction of an extension to the wharf at Sand Point. Under your administration as minister, an extensive scheme of improvement has also been inaugurated on the west side which contemplates the construction of a number of additional winter port berths to the southward of Sand Point. The dredging required in connection with the proposed berths is at present progressing very satisfactorily under a contract dated September 16 last with the Maritime Dredging Company, which has now three dredges engaged on the work, the largest of which, the *Cynthia*, is equipped with a 12-yard bucket. The large departmental elevator dredge *Fielding* has also been put to work in the main channel with very beneficial results.

Generous sums of money have also been expended in the different provinces, during the year under review, for the purpose of providing more adequate wharf accommodation and in the improvement of harbours by dredging for the benefit of the local shipping and coasting trade. A great deal has also been accomplished in providing boat harbours and protection works for the fishermen of the maritime provinces. Owing to the existence of the limnoria and the teredo in the waters of the Atlantic and the Gulf of St. Lawrence, the use of creosoted timber is yearly becoming more extensive in these works, and will increase their lifetime by many years. In this con-

9-10 EDWARD VII., A. 1910

nection, it may not be out of place to mention that there would seem to be a field for the production in Canada of creosoted timber, which might be very profitably taken up by private enterprise, for as it is at present all this timber has to be specially treated at works established in the States of North Carolina and Virginia and imported into Canada.

GEORGIAN BAY CANAL.

The final report of the corps of engineers who conducted this survey has now been published, and I think is conceded to be the finest report of an engineering character yet issued by any department of the Canadian government. The result of arduous labour, in both field and office, it evidences from every standpoint the highest engineering ability and the most exhaustive study of modern methods of canal construction as applied to the projected work. The construction of a 440 mile inland waterway from the Georgian Bay to the port of Montreal is demonstrated to be an entirely feasible scheme, and a most carefully prepared estimate has been made of the cost of the different sections of the proposed canal. Investigations are still being carried on and will be continued along the tributaries of the Ottawa river in connection with the question of water storage for canal purposes.

UPPER OTTAWA RIVER STORAGE.

A commencement has this year been made by the department in the very important undertaking the storing, during the period of spring freshets, the waters of the upper Ottawa river. The Ottawa drainage basin consists of an area of 55,000 square miles, 15,000 of which lie in the province of Ontario, draining into the Petawawa, Madawaska, Mississippi, Rideau and Nation rivers, and 40,000 in the province of Quebec, draining into the great Victoria basin, Timiscamingue, Kippewa, Dumoine, Black, Coulonge, Gatineau, Lièvre and Rouge rivers. The three latter sub-basins in Quebec drain 20,000 square miles, leaving only 20,000 square miles of well-watered pine country, nearly all of which drains into Lake Timiscamingue, 100 square miles in area. In the Timiscamingue district, conditions are very favourable to the storage of the run-off or surplus water because of the great granite ponds with their narrow gorge-like outlets. The storage of the upper Ottawa means the control by sluices of the various lakes so that the overflow waters of the spring will be retained and stored until autumn, when they can be used to augment the very meagre flow from the month of October to the month of March. Records show that all the water flowing down the Ottawa for sixty years past has averaged 55,000 cubic feet per second of that time, and at times it has run off at as high a rate as 250,000 cubic feet per second, only, however, to dwindle down as low as 10,000 to 15,000 cubic feet per second.

In the upper Ottawa lakes, an artificial reservoir has been provided by nature; Lake Kippewa, 100 square miles in area, Quinze and Expanse lakes, 100 square miles and Timiscamingue, 100 square miles, and these can be gradually supplemented by numerous other lakes of smaller area. The three basins mentioned are capable of storing approximately, a layer of 15 feet deep over an area of 300 square miles, or 4,500 square miles one foot deep. This will furnish a flow of nearly 10,000 cubic feet per second during the low water period when the flow at Ottawa is only 10,000 to 12,000

SESSIONAL PAPER No. 19

cubic feet per second, or in other words, the 150 days' short flow of water would be doubled. What this will mean to the navigation, lumber and power interests along the Ottawa river does not require to be enlarged upon.

CONSERVATION OF NATURAL RESOURCES.

Another movement which may fittingly be referred to in this connection is that of the conservation and better utilization of the natural resources of the Dominion. Legislation was passed at the last session of parliament empowering the appointment of a National Commission to undertake the study of this question, and the personnel of the commission has recently been decided upon under the chairmanship and active direction of Honourable Clifford Sifton. The members have been selected with a view to securing the very best body of men available and fitted to deal in a broadminded and comprehensive manner with questions fraught with so much importance to the whole future industrial and commercial prosperity of the country. At the commencement of the movement, the Department of Public Works immediately took steps to assist, within its purview, in the getting of necessary detailed information. Early this year, the district engineers of the department were requested to compile a statement, each for his own district, containing the names of navigable rivers and lakes therein, length of the stretches navigated, with approximate depth and width, and, in cases where conservation of water by reserve dams has been considered for navigation purposes, particulars as to the flooding of lakes or water-powers, giving as detailed information as possible regarding the latter, such as location, state of development, amount of discharge at low and high stages and, if already disposed of, name of owner or lessee and conditions of sale or lease. The gathering of this data will, necessarily, require considerable time and extensive preliminary examinations, but a substantial beginning has already been made.

DREDGING.

The expenditure of the department under the head of dredging, including new plant, repair and maintenance of existing plant, amounts to \$4,547,773.43, a sum of \$1,203,466.87 in excess of the outlay during the preceding year in this field of departmental operations. The work has been carried on both by privately owned and departmental dredges in all parts of the Dominion. During the present year a change has been inaugurated with respect to the method of operation of the departmental dredging plant, which has now been placed under the direction of the various district engineers so far as the location and extent of the work to be performed is concerned, while the superintendents of dredges are charged with the maintenance, repair and operation of the plant and its removal from place to place as directed by the district engineer. I am pleased to say that the adoption of this policy has been followed by the most satisfactory results.

Outside of the various national harbours where dredging has been performed and to which reference has already been made, works of improvement have been carried on at the following places:—

Maritime Provinces.

Nova Scotia.—Battery Shoal, Lewis wharf and shoal outside, Cape Breton county, La Have river, Liverpool, Marine Slip (Yarmouth), Pictou bar, Port Mulgrave, Sherbrooke and Yarmouth.

9-10 EDWARD VII., A. 1910

New Brunswick.—Blacks Harbour, Clifton, Flewellings wharf, Hampton, Harbour channel St. John, Dalhousie, Long Island Kennebecasis river, L'Etêté, Moss Glen, Reids Point wharf, Oak Bay, Rothesay, Sealys shoal, St. Andrews basin (eastern entrance), St. George, Traverse, Whitehead and winter port berths, St. John.

Prince Edward Island.—Ammandale, Murray river, Murray Harbour south, McPhersons Cove, Grand river, Pownal, Souris and Victoria (Crapaud).

Quebec.

Bécancour, Berthier, Chicoutimi, Chateauguay, Dorion, Fassett, Gatineau Point, Godefroy River, Green Shoals, Ile aux Foins, Ile aux Noix, Ile Perrot, Lake St. John, L'Assomption, Lièvre River, Louiseville, Montebello, Nicolet, Papineauville, Point Lévis, Port St. François, Quebec, Rigaud, Rimouski, River Batiscan, River du Loup, River Jésus, River Maskinongé, River Ouelle, River St. Francis, St. Jean des Chailons, St. Johns, St. Maurice River, St. Pierre les Beequets, St. Placide, Saguenay River, Sorel, Three Rivers, Vaudreuil, Verdun, Ville Marie, Yamachiche and Yamaska.

Ontario.

Blanche Shoals, Blind River, Bowmanville, Burlington Channel, Cobourg, Collingwood, Trenton, Garden Island, Goderich, Hamilton, Hawkesbury, Kincardine, Kingston, Lake Nipissing, Lion's Head, Little Current, L'Original, Meaford, Newcastle, New Liskeard, Owen Sound, Pelee Island, Penetanguishene, Picton, Point Edward, Port Arthur, Fort William, Mission and Kaministiquia Rivers, Port Bruce, Port Burwell, Port Elgin, Port Hope, Port Stanley, Rondeau, Ruscombe River, Sarnia, Sault Ste. Marie, Spanish River, Summerstown, Thames River, Thornbury, Tiffin, Toronto, Victoria Harbour, Waubausheene, Wiarton, Wingfield Basin and Wolfe Island.

Manitoba.

Icelandic River, Lake Francis, Red River, St. Andrews Lock, Swan Lake and Lake Winnipegosis

British Columbia.

Union Bay, Fraser River (at Matsqui), Harrison River, Vancouver, Victoria, Annieville Bar, Nanaimo, Okanagan River, Thompson River and Woods and Long lakes.

During the year, the department's plant has been augmented by the addition of two powerful dredges, the *Quebec* and *Industry*, and a large suction dredge of new type, called the *Fruhling*, has been purchased for use in British Columbia waters where in the mountain rivers of that province, with their continually shifting channels owing to the vast deposits of sand, mud and silt brought down during periods of freshet, its operation should prove particularly efficacious. The *Fruhling* is a hydraulic hopper and suction dredge with steel hull having a length of 157 feet, breadth

SESSIONAL PAPER No. 19

54.6 feet, with a draught when loaded of 13.1 feet, and capable of dredging to a depth of 45 feet at the rate of 1,500 cubic yards per hour, when discharge pipe is employed. The capacity of the hoppers is 785 cubic yards. The feature of the *Fruhling* dredge is the closing of the mouth of the suction pipe by a large bucket, or plough, which bites into the surface of the material dredged. This system is specially developed to deal with such light materials as those above mentioned. This dredge is at present engaged in the improvement of the Fraser river channel with the object of providing deep water navigation from the city of New Westminster to the sea.

PUBLIC BUILDINGS.

This branch of the service has expended the sum of \$5,845,286.70 as compared with \$4,331,901.40 in the preceding year. During the year the following buildings were completed:—

Nova Scotia.—Truro, armoury.

Quebec.—Cookshire, post office; Lachute, post office; Magog, post office, St. Johns, post office; St. Johns, cavalry stables.

Ontario.—Belleville, drill hall; Hamilton, drill hall; Kincairdine, post office; Ottawa, Parliament Building addition; Peterborough, drill hall; Simcoe, post office; Strathroy, armoury; Toronto, drill hall; Walkerton, armoury.

Manitoba.—Brandon, armoury; Neepawa, post office; Selkirk, post office; Winnipeg, examining warehouse and post station 'B'; Fort Osborne, guard room and quarters.

Saskatchewan.—Maple Creek, post office; Regina, public building; Saskatoon, public building.

Alberta.—Edmonton, public building; Medicine Hat, public building.

British Columbia.—Cumberland, post office; Ladysmith, public building; Vancouver, public building.

And others were either placed under contract or are presently in course of construction as follows:—

Prince Edward Island.—Georgetown, public building.

Quebec.—Joliette, armoury; Montreal, postal station 'D'; Montreal, general post office; Plessisville, post office; Quebec, School of Gunnery; Quebec (St. Roch), post office; Sherbrooke, drill hall.

Ontario.—Durham, armoury; Glencoe, post office; Kingston, quarters for subordinate staff; Kingston, barracks for stables; Leamington, post office; Ottawa, Royal Victoria Museum; Parkhill, post office; Toronto, Observatory; Welland, post office; Whitby, post office.

9-10 EDWARD VII., A. 1910

Manitoba.—Dauphin, post office; Emmerson, post office.

Saskatchewan.—Estevan, post office; Yorkton, post office.

British Columbia.—Victoria, Immigration Hospital; Victoria, public building addition.

The report of the Chief Architect shows in detail the nature and value of the work performed. Among the buildings deserving of particular mention which have been completed or are fast nearing completion are the Royal Victoria Museum and the new wing of the Parliament Buildings at Ottawa; additions to the drill halls at Toronto and Hamilton, Ont., and the new drill halls at Peterborough and Belleville, Ont., the Regina, Edmonton and Vancouver public buildings, all of which are exceptionally creditable structures, both from the point of view of architectural design and of efficient workmanship.

During the past ten years, the increase in number of government employees, consequent upon the establishment of new services and the enlargement and extension of existing ones, rendered necessary as the country developed, has resulted in many of the departments being forced to sub-divide their staffs and seek accommodation outside of the departmental buildings, in rented buildings throughout the city. Steps were accordingly taken some four years ago looking to the construction of a new departmental building at Ottawa, which it was finally decided to place on the eastern side of Major's Hill Park. The Crown has now acquired all the properties between Sussex street and Mackenzie avenue from the Lindsay Departmental Store to the Royal Mint. The Chief Architect has almost completed plans and specifications for a new departmental block 576 feet in length by 190 feet in depth, six stories in height and containing approximately 588,000 square feet of floor area. The building will be located a short distance south of St. Patrick street and will face the park, extending into it beyond the line of Mackenzie avenue. The new structure will afford accommodation for all the services now occupying rented buildings in the city and will enable the scattered branches of some of the larger departments to be reunited, thereby obviating much loss of time and inconvenience to those having public business to transact, and making possible the more immediate supervision of the different services by the departmental head.

MISCELLANEOUS.

Other reports contained in this volume, which are well worth careful perusal, are that of the Accountant, giving in detail the expenditure in connection with the various services carried on by the department; the report of the Superintendent of Telegraphs; of the Law Clerk, comprising a list of contracts entered into and a statement of the properties purchased, sold or leased by or to the department; of the Collector of Revenue, showing the state of the revenue during the past fiscal year, and also less important appendices which will convey some idea of the large amount of work performed by the department.

SESSIONAL PAPER No. 19

Before concluding, I wish to express my sincere appreciation of the hearty co-operation of all the officials of the department in the work of the year.

I have the honour to be, sir,

Your obedient servant,

J. B. HUNTER,
Deputy Minister.

PART II

REPORT OF THE CHIEF ACCOUNTANT

FOR THE

FISCAL YEAR ENDED MARCH 31

1909

DEPARTMENT OF PUBLIC WORKS, CANADA,
ACCOUNTANT'S OFFICE,
OTTAWA, August 20, 1909.

NAPOLÉON TESSIER, Esq.,
Secretary,
Department of Public Works,
Ottawa.

SIR.—I beg to submit the report upon the expenditures made by this department during the fiscal year ended, March 31, 1909.

As in previous years, the report takes the form of three tabular statements, as follows:—

Statement A, showing the expenditures upon each work under the several heads of (1) construction and improvements, (2) repairs, (3) staff and maintenance. In treating of public buildings, as it would be cumbersome to give the cost of maintenance in detail in this statement, that expenditure is condensed into one item for each province, the fuller detail being reserved for *Statement B*.

Statement B, showing separately for each building, the cost of rent, salaries, heating, lighting and water.

Statement C, showing amounts advanced by government for the construction of certain works of a semi-public character, under statutory authority and after inspection by officers of this department.

The total expenditure during the fiscal year was \$14,784,739.39, an increase of \$3,585,354.45 over the expenditures in 1907-8.

The volume of work passed through the Accountants Branch during 1908-9 may be briefly indicated as follows:—

	Number of cheques issued.	Amount.
		\$ cts.
Direct payment by Departmental cheque—		
Issued by head office, Ottawa.....	63,130	4,857 566 35
" agencies.....	10,631	833 289 53
Total departmental cheques.....	73,761	5,690,855 88
Payment by Receiver General's cheque, after applications issued by this office, upon the Auditor General (contract work, &c).....	1,518	9,093,883 51
Total expenditure.....		14,784,739 39

I have the honour to be, sir,

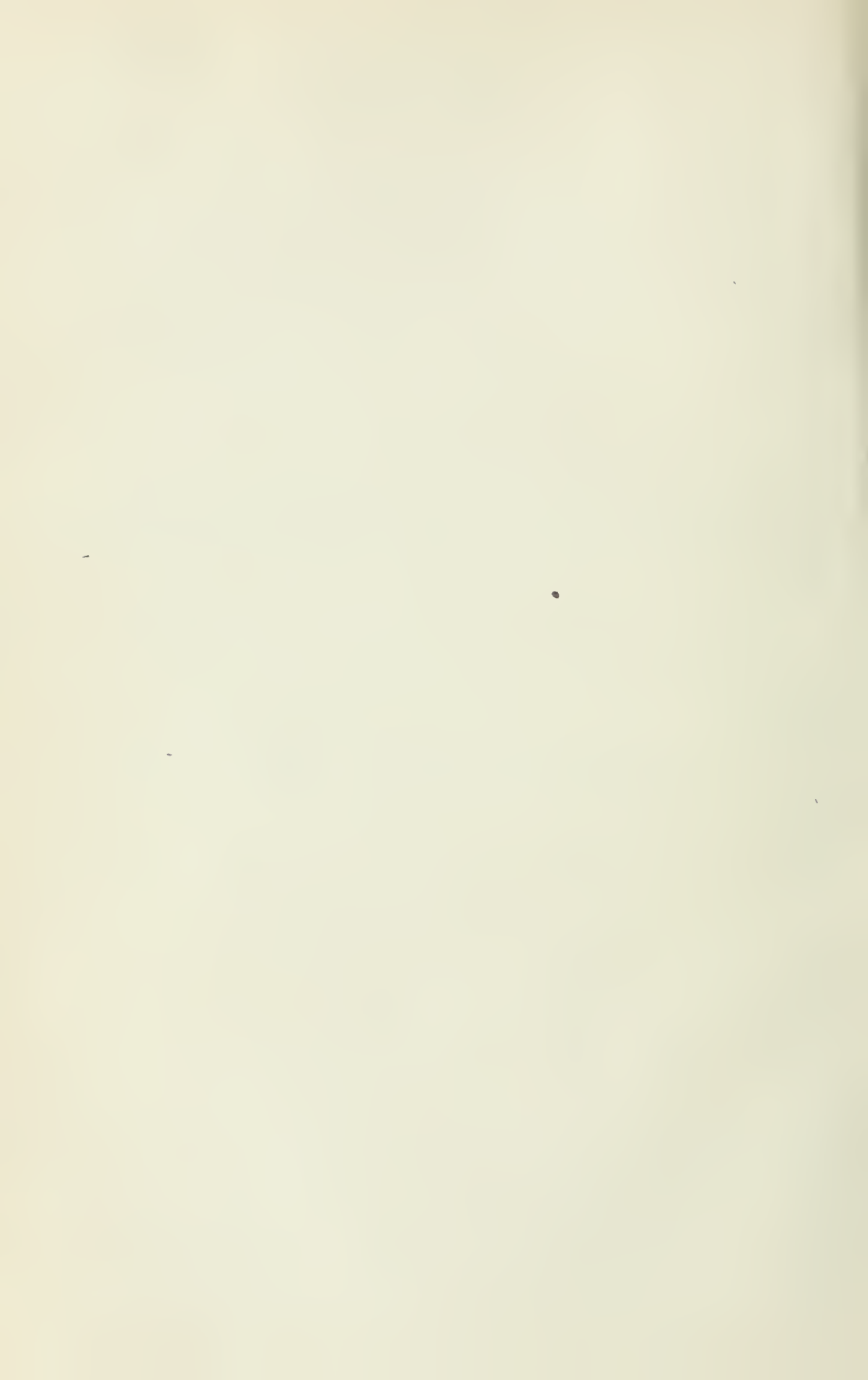
Your obedient servant,

A. G. KINGSTON,
Chief Accountant and Controller.

STATEMENT OF EXPENDITURE

DURING

FISCAL YEAR ENDED MARCH 31, 1909



STATEMENT A.—Showing the Amounts Expended by the Department of Public Works of Canada during the Fiscal Year ending March 31, 1909.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS.				
<i>Nova Scotia.</i>				
Amherst post office, &c.....	2 346 04	28 10		2 374 14
Annapolis post office, &c.....		649 47		649 47
Antigonish post office, &c.....	5 018 73	7 95		5,026 68
Ariehat post office, &c.....		4 50		4 50
Baddeck post office, &c.....		17 10		17 10
Bridgewater post office, &c.....	27,866 71			27,866 71
Canning armoury.....	3,000 00			3,000 00
Canso post office, &c.....	1,737 74	144 97		1,882 71
Dartmouth post office, &c.....	103 89	88 95		195 84
Digby post office, &c.....	12 10	45 77		57 87
Glace Bay post office, &c.....	27,302 00			27,302 00
Guysboro' post office, &c.....	412 17	68 13		480 30
Halifax appraiser's office.....	6 50	19 05		25 55
" custom house (new).....	12,000 43	41 24		12,041 67
" immigrant building.....		1,756 49		1,756 49
" detention building.....	4,741 55			4,741 55
" Lawlor's Island quarantine station (winter hospital).....	15,861 67			15,861 67
" post office (formerly Dominion building).....	19,911 50	261 05		20,172 55
Inverness post office, &c.....	4,451 71	19 22		4,470 93
Kentville post office, &c.....	5 00	131 69		136 69
Liverpool post office, &c.....	2 95	215 40		268 35
Lunenburg post office, &c.....	2,554 91	60 03		2,614 94
Nappan experimental farm.....		5 88		5 88
New Glasgow post office, &c.....	1,707 02	7 13		1,714 15
North Sydney post office, &c.....		906 16		906 16
Parrsboro' post office, &c.....	3,028 25			3,028 25
Pictou custom house.....		84 89		84 89
" post office, &c.....	8 25	329 66		337 91
Point Edward quarantine station.....		542 51		542 51
Shelburne post office, &c.....	16,936 80			16,936 80
Springhill post office, &c.....		393 29	160 00	553 29
Sydney post office, &c.....	104 39	250 25		354 64
" Mines post office, &c.....		71 89		71 89
Truro armoury.....	2,683 21			2,683 21
" post office, &c.....	2 75	328 83		331 58
Westville post office, &c.....	15,250 84			15,250 84
Windsor post office, &c.....		451 20		451 20
Wolfville post office, &c.....	4,077 24			4,077 24
Yarmouth post office, &c.....	2,847 78	72 91		2,920 69
Heating, lighting, water, &c., for all buildings in Nova Scotia (for details see page 32).....			44,499 61	44,499 61
Totals, Nova Scotia.....	173,985 13	7,053 71	44,659 61	225,698 45
<i>Prince Edward Island.</i>				
Charlottetown Dominion building.....	1,894 35	1,492 68		3,387 03
" quarantine station.....		87 00		87 00
Georgetown post office, &c.....	4,750 72			4,750 72
Montague ".....	151 58	823 28		974 86
Souris ".....	401 50	181 08		582 58
Summerside ".....		1,555 93		1,555 93
Heating, lighting, water, &c., for all buildings in Prince Edward Island (for details see page 32).....			7,614 28	7,614 28
Totals, Prince Edward Island.....	7,198 15	4,139 97	7,614 28	18,952 40
<i>New Brunswick.</i>				
Bathurst post office, &c.....		43 04		43 04
Buctouche ".....	30 00			30 00
Campbellton ".....		396 43		396 43
Chatham ".....	99 05	153 26		252 31
Chatham quarantine station.....		925 51		925 51

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
New Brunswick—Continued.				
Dalhousie post office, &c.....		94 19		94 19
Fairville ".....	2,000 00			2,000 00
Fredericton ".....		3,458 05		3,058 05
Grand Falls ".....	944 55			944 55
Hillsboro' ".....	26 55			26 55
Moncton ".....	110 55	36 86		197 41
Newcastle ".....		48 60		48 60
Richibucto ".....		1,042 22		1,042 22
St. John custom house.....	159 20	3,082 33		3,241 53
" drill hall.....	92 00			92 00
" immigrant building.....	2,163 68	471 02		2,635 30
" military stores building.....	25,748 32			25,748 32
" Partridge Island quarantine station.....	8,910 46			8,910 46
" post office.....	1,656 45	936 40		2,592 85
" savings bank.....		11 99		11 99
" West post office.....	1 50	99 32		100 82
St. Stephen's post office, &c.....		45 15		45 15
Sussex ".....		93 40		93 40
Tracadie lazaretto.....	7,639 54	86 75		7,726 29
Woodstock armoury.....	27 00			27 00
" post office, &c.....	36 75	33 75		70 50
Heating, lighting, water, &c., for all buildings in New Brunswick, (for details see page 33).....			39,490 73	39,490 73
Totals, New Brunswick.....	49,695 00	11,058 87	39,490 73	100,245 20
Quebec.				
Acton Vale post office, &c.....	6 89	165 55		172 44
Arthabascaville ".....	2,500 00			2,500 00
Aylmer ".....	72 46	57 00		129 46
Berthierville ".....		419 33		419 33
Buckingham ".....	13 15	93 42		106 57
Chicoutimi ".....	7,157 43			7,157 43
Cookshire ".....	8,914 47			8,914 47
Coaticook ".....		347 45		347 45
Drummondville ".....	1,003 21	29 85		1,033 06
Dundee custom house.....		3,512 02		3,512 02
Grosse Isle quarantine station improvements.....		11,635 36		11,635 36
" disinfecting apparatus, including building.....	5,058 72			5,058 72
Farnham post office, &c.....	4 35	19 23		23 58
Fraserville ".....	138 25	1,547 18		1,685 43
Granby ".....	6 80	1,030 12		1,036 92
Hochelaga ".....	868 00	139 94		1,007 94
Hull ".....	4 75	37 60		42 35
Iberville ".....	805 70	665 78		1,471 48
Joliette armoury.....	1,105 24			1,105 24
" post office, &c.....		116 30		116 30
Knowlton ".....	18,396 08			18,396 08
Lachine ".....	3 05	120 27		123 32
Lachute ".....	17,696 78			17,696 78
Lake Megantic post office, &c.....	4,085 70			4,085 70
Laprairie ".....		389 35		389 35
L'Assomption ".....		34 34		34 34
Lévis ".....	525 11	16 25		541 36
Longueuil ".....	466 20	13 65		479 85
Magog ".....	22,991 92			22,991 92
Marieville ".....	1,631 66			1,631 66
Montmagny ".....	210 00	183 50		393 50
Montreal custom house.....	6,669 30	1,882 95		8,552 25
" eastern postal station.....	25,000 00			25,000 00
" engineer's office.....		75 63		75 63
" examining warehouse.....	248 00	38,967 92		39,215 92
" power for elevators.....			2,768 22	2,768 22
" immigration office.....		889 24		889 24
" inland revenue office.....	134 25	663 66		797 91
" new examining warehouse.....	412,518 32	70 65		412,588 97
" pneumatic tube system, between general post office and new postal stations.....		277 51	235 94	513 45
" post office (main).....	383,312 74	6,700 02		390,012 76
" power for elevators.....			3,112 05	3,112 05
" postal station "A", 430 Wellington street.....		122 65		122 65
" postal station "B" (new).....	19,924 51	341 94		20,266 45
" postal station "C", 266a Amhurst street.....	46 57	765 56		812 13
Nicolet post office, &c.....	4,929 18			4,929 18

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
PUBLIC BUILDINGS—Continued.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Quebec—Continued.</i>				
Nominique immigration building.....		217 04		217 04
Peribonca.....		87 60		87 60
Pierreville post office, &c.....	5,225 00			5,225 00
Plessisville.....	3,833 83			3,833 83
Pointe St. Charles new postal station.....	15,724 35			15,724 35
Quebec citadel, Governor General's quarters.....		37,943 10		37,943 10
" custom house.....	96 29	1,219 01		1,330 30
" Dominion arsenal, main store building.....	25,843 21			25,843 21
" drill shed, school of gunnery.....	402 41			402 41
" drill hall, addition to building and levelling grounds.....	4,755 38			4,755 38
" examining warehouse.....		402 28		402 28
" marine and fisheries agency.....		310 06		310 06
" immigrant buildings.....	11,656 07	2,180 95		13,837 02
" hospital for trachoma.....	7,373 03			7,373 03
" observatory.....		62 18		62 18
" post office.....	11,814 47	3,377 74		15,192 21
" power for stamp machine.....			250 00	250 00
" St. Roch's post office.....	23,762 48	70 41		23,832 89
Richmond post office, &c.....	3,732 89	70 84		3,803 73
Rigaud armoury.....	1,524 20			1,524 20
Rimouski, post office, &c.....	1,229 25	121 81		1,351 06
Roberval immigrant shed.....		398 32		398 32
" post office, &c.....	4,000 00			4,000 00
Sherbrooke drill hall.....	61,758 69			61,758 69
" post office, &c.....	66 61	2,349 18		2,435 79
Sorel.....	694 26	350 02		1,074 28
" St. Eustache.....	1,057 12	152 68		1,209 80
St. Gabriel de Brandon post office, &c.....		5 00		5 00
St. Henri post office, &c.....	933 64	33 83		967 47
St. Hyacinthe drill hall.....	971 50			971 50
" inland revenue.....		510 42		510 42
" post office.....		2,155 16		2,155 16
St. Jacques de l'Achigan post office, &c.....	3,000 00			3,000 00
St. Jerome post office, &c.....		552 07		552 07
St. Johns.....	19,840 54	173 32		20,013 86
" military buildings, stable for cavalry.....	22,986 92			22,986 92
St. Louis du Mile End post office.....	712 80	1,819 62		2,532 42
St. Therese post office, &c.....	5,050 00			5,050 00
Terrebonne.....		402 95		402 95
Thetford Mines post office, &c.....		855 19		855 19
Three Rivers custom house.....	10 00	2,245 56		2,255 56
" drill hall and armoury.....	1,160 74			1,160 74
" post office.....	22,140 06	882 65		23,022 71
Valleyfield post office, &c.....	211 00	36 53		247 53
Victoriaville.....	9 30	477 72		487 02
Heating, lighting, water, &c., for all buildings in Quebec (for details see page 34).....			155,859 81	155,859 81
Totals, Quebec.....	1,208,018 87	130,874 96	162,226 02	1,501,119 85
<i>Ontario</i>				
Alexandria post office, &c.....	7 00	23 35		33 35
Almonte.....	217 72	118 84		336 56
Amherstburg.....		24 23		24 23
Arnprior.....	10 60	1,155 88		1,166 48
Barrie.....		270 60		270 60
Belleville armoury.....	85,806 17			85,806 17
" post office, &c.....	50 50	352 43		402 93
Berlin.....	2,172 90	54 84		2,227 74
Bowmanville.....	2 00	30 14		32 14
Brampton.....	2 25	401 59		403 84
Brantford drill hall and armoury.....	2,661 97	250 00		2,911 97
" post office, &c.....	684 14	319 04		1,003 18
Bridgeburg.....		4 05		4 05
Brockville.....	301 79	2,553 82		2,855 61
Carleton Place.....		18 00		18 00
Cayuga.....		294 65		294 65
Chatham armoury.....	3,111 55			3,111 55
" post office, &c.....	1,936 57	111 53		2,048 10
Chesley.....	3,809 40			3,809 40
Clinton.....	0 25	345 82		346 07
Cobourg armoury.....	2,974 55			2,974 55
" post office, &c.....	170 00	476 61		646 61

9-10 EDWARD VII. A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
Ontario—Continued.				
Collingwood post office, &c.		107 00		107 00
Cornwall "	1,802 47	70 23		1,872 70
Deseronto "	145 00	65 40		210 40
Dresden "	2,103 80			2,103 80
Dundas "	5,022 80	3 50		5,026 30
Durham armoury.	101 75			101 75
Elora post office, &c.	413 78			413 78
Essex "	1,012 90			1,012 90
Fergus "	721 08			721 08
Fort William post office, &c.	388 57	37 10		425 67
Galt "	14 00	237 85		251 85
Gananoque custom house.		443 00		443 00
" post office, &c.	386 01	45 50		431 51
Glencoe "	781 60			781 60
Goderich "	85 06	132 57		217 63
Guelph armoury.	65,340 61			65,340 61
" post office, &c.	153 15	407 74		560 89
Hamilton drill hall.	143,703 23			143,703 23
" post office.	12,666 50	394 51		13,061 01
" " power for machinery.			45 00	45 00
Harrison post office, &c.	3,018 45			3,018 45
Hawkesbury "	11 00	85 29		97 29
Ingersoll "		13 08		13 08
Juniper Island "	60 00			60 00
Kemptville "	3,003 70			3,003 70
Kenora "		197 70		197 70
Kincardine "	12,050 43			12,050 43
Kingston Custom house.		473 94		473 94
" examining warehouse.		108 90		108 90
" inland revenue office	5 00	810 05		815 05
" post office.	123 79	908 11		1,034 90
Kingston Military district—				
Artillery Park barracks.	3,686 11			3,686 11
New hospital for A. and B. batteries.	188 00			188 00
R. M. C. new servants quarters.	54,717 47			54,717 47
" stables.	3,337 95			3,337 95
Tete du Pont barracks, alterations to A. C. and E. blocks.		8,544 78		8,544 78
Leamington post office, &c.	1,657 80			1,657 80
Lindsay "	35 00	128 29		163 29
Listowel "	3,898 35			3,898 35
London custom house.	344 95	809 29		1,154 24
" drill hall and armoury.		150 00		150 00
" military buildings, new store building.	602 60			602 60
" post office.	2,849 03	429 35		3,278 42
Markham "	8,537 31			8,537 31
Meaford armoury.	25 00			25 00
Mitchell post office, &c.	1,609 00			1,609 00
Mount Forest post office, &c.	3,662 54			3,662 54
Napanee "	75 23	86 60		161 83
Niagara Falls "	117 27	93 44		210 71
North Bay "	16,758 59	1 25		16,759 84
Orangeville "	110 00	33 73		143 73
Orillia "		23 78		23 78
Oshawa "	129 00	72 70		201 70
Ottawa, astronomical observatory.	21,489 47	37 65		21,527 12
" " power for machinery.			177 08	177 08
" bacteriological laboratory.		216 12		216 12
Departmental buildings—				
Department of Mines, testing fuel.	2,093 00			2,093 00
Elevator in western block.	4,035 47			4,035 47
Equipment for elevator in eastern block.	3,633 50			3,633 50
Improvements in lavatories.	8,679 92			8,679 92
New departmental buildings.	39,115 89			39,115 89
Renewal of skylights.		64 20		64 20
" Experimental farm.	13,169 64	2,450 22		15,619 86
" Government printing bureau, electric motor, machinery, &c.	20,847 13			20,847 13
" Major's Hill park.			8,020 74	8,020 74
" National art gallery.	14,670 05		851 75	15,521 80
" Parliament buildings, improvements.	189,977 71			189,977 71
" Rideau Hall, improvements.			29,553 28	29,553 28
" " grounds, \$9,441.17; snow, \$1,297.18; fuel and light, \$8,500; watchman, \$600.			10,898 35	10,898 35
" Royal Mint.	61,353 09			61,353 09

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
PUBLIC BUILDINGS—Continued.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Ontario—Continued.				
Ottawa Supreme Court library.....	3,607 26			3,607 26
" Victoria memorial museum.....	376,867 00			376,867 00
" generally, steel fittings, &c.....	49,997 71			49,997 71
" " Parliament grounds.....			13,981 84	13,981 84
" " power for elevators.....			7,241 47	7,241 47
" " removal of snow.....			2,670 69	2,670 69
" " repairs and furniture.....		195,031 83		195,031 83
" " telephone service.....			17,213 48	17,213 48
Owen Sound post office, &c.....	42,465 31			42,465 31
Paris " " " " " " " "	8 65	2 50		11 15
Parry Sound custom house.....	420 74	17 45		438 19
Park Hill post office, &c.....	1,253 16			1,253 16
Pembroke " " " " " " " "	323 35	74 70		401 05
Peterboro armoury.....	83,358 57			83,358 57
" custom house.....		64 62		64 62
" post office.....	5 90	513 16		519 06
Petrolia post office, &c.....		31 79		31 79
Pictou " " " " " " " "	30 95	24 44		55 39
Port Arthur immigrant building.....		18 31		18 31
" post office, &c.....	10,858 75	47 17		10,905 92
Port Colborne " " " " " " " "	50 60	212 30		2 90
Port Hope " " " " " " " "		91 65		91 65
Prescott " " " " " " " "	1,500 11	1,028 93		2,508 04
Renfrew " " " " " " " "	19,974 16			19,974 16
Sandwich " " " " " " " "	715 50	17 45		732 95
Sarnia armoury.....	5,500 00			5,500 00
" post office, &c.....	19 34	205 25		225 60
Sault Ste. Marie post office, &c.....	1 50	231 00	19 50	252 00
Seaforth " " " " " " " "	4,008 90			4,008 90
Simcoe " " " " " " " "	21,912 17			21,912 17
Smith's Falls " " " " " " " "		90 68		90 68
Stratford armoury.....	2,034 04			2,034 04
" post office, &c.....	21 50	1,318 31		1,339 81
Sturthroy armoury.....	19,455 92			19,455 92
" post office, &c.....		81 92		81 92
Sturgeon Falls " " " " " " " "	2,021 09			2,021 09
St. Catharines drill hall and armoury.....	1,275 19			1,275 19
" post office, &c.....	13 50	498 84		512 34
St. Mary's " " " " " " " "	3,719 55	10 99		3,730 54
St. Thomas " " " " " " " "	1 08	87 20		88 28
Sudbury public building.....	12,028 30			12,028 30
Tilsonburg post office, &c.....	5,521 35			5,521 35
Toronto assistant receiver general's office.....		15 80		15 80
" clerk of works office.....		71 70		71 70
" custom house, addition and alterations.....		1,674 69		1,674 69
" power for elevator.....			144 70	144 70
" drill hall, additional accommodation.....	4,613 12			4,613 12
" engineer's office.....		49 77		49 77
" examining warehouse.....		3,589 42		3,589 42
" inland revenue office.....		47 05		47 05
" meteorological observatory.....	65,039 52			65,039 52
military buildings—				
Barracks for permanent corps.....	30 53			30 53
Magazine.....	3,002 65			3,002 65
" post office.....	10,248 12	1 988 55		12,276 67
" power for elevator.....			420 36	420 36
" pneumatic tubes.....		766 89		766 89
" annex for custom parcels.....	25,400 71			25,400 71
" postal station A.....	29 25	327 24		356 49
" power for machinery.....			182 05	182 05
" B.....	9 68	71 58		81 26
" C.....	378 94	218 91		597 85
" E.....		5 78		5 78
" F.....	219 31	453 86		673 17
" G.....	123 73	139 21		265 94
" H.....	123 25	313 46		439 71
Junction post office.....		587 88		587 88
Trenton post office, &c.....	1 252 74			1,252 74
Uxbridge " " " " " " " "	7,394 10			7,394 10
Walkerton armoury.....	5,013 90	16 65		5,030 55
" post office, &c.....	5,022 60			5,022 60
Waterloo " " " " " " " "	6,938 69			6,938 69
Welland " " " " " " " "	3,490 58			3,490 58
Whitby " " " " " " " "	321 67	243 97		565 64
Windsor " " " " " " " "		45 71		45 71
Wingham " " " " " " " "				

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>Ontario—Concluded.</i>				
Woodstock armoury.....	2 9 87			2 9 87
" post office, &c.....	90 00	709 42		799 42
Heating, lighting, water, &c., for all buildings in Ontario (for details see page 35).....			469,399 39	469,399 39
Totals, Ontario.....	1,046,583 31	235,284 35	5,9,819 68	2,451,687 34
<i>Manitoba.</i>				
Bannerman cattle quarantine station.....	130 98			130 98
Brandon drill hall.....	39,597 45			39,597 45
" experimental farm.....	2,014 33	754 60		2,768 96
" immigrant shed.....		105 10		105 10
" post office, &c.....	179 10	1,202 53		1,381 66
Dauphin ".....	15,255 48			15,255 48
Elmwood ".....	5,544 87			5,544 87
Emerson ".....	523 13			523 13
Gretna cattle quarantine station.....	85 50			85 50
Neepawa post office, &c.....	20,509 14			20,509 14
Portage la Prairie armoury.....	4 25			4 25
" post office.....	1,153 40	132 98		1,286 38
St. Boniface post office, &c.....	13,758 71			13,758 71
Selkirk ".....	23,022 83			23,022 83
Souris ".....	5,011 00			5,011 00
Winnipeg custom house.....	0 75	392 89		393 14
" engineer's office.....		10 50		10 50
" examining warehouse.....	180,083 84	74 55		180,158 39
" immigrant building (new).....	10,608 18	31 75		10,639 93
" " power for machinery.....			49 52	49 52
" " (old).....	3,780 66	219 65		4,000 31
" " power for machinery.....			49 53	49 53
" land's office.....	3,129 75	163 20		3,292 95
Military District—				
quarters for married N. C. officers.....	57,082 50			57,082 50
post office (old).....	1,133 91	954 33		2,088 24
" " power for machinery.....			33 45	33 45
" " (new).....	53,590 16	317 44		53,907 10
" " north of C. P. R. track.....	23,297 08	2 05		23,299 13
" Railway Commissioners office.....		192 30		192 30
Heating, lighting, water, &c., for all buildings in Manitoba (for details see page 36).....			51,483 30	51,483 30
Totals, Manitoba.....	459,497 03	4,554 40	51,918 80	515,970 23
<i>Saskatchewan and Alberta.</i>				
Athabasca lands office.....		55 00		55 00
Banff museum.....	277 95			277 95
Battleford Dominion lands office.....	3,097 82			3,097 82
Calgary custom house.....	153 80	141 50		295 30
" Dominion lands office.....	125 00	1,062 85		1,187 85
" immigrant shed.....		253 67		253 67
" post office.....	25,474 67	609 12		26,083 79
" " power for machinery.....			317 15	317 15
Edmonton Dominion lands and registry office.....	1,578 12	171 56		1,749 68
" immigrant building.....	400 00	31 59		431 59
" post office.....	70,849 38	280 95		71,130 33
" " power for machinery.....			12 90	12 90
Estevao Dominion lands office.....	142 56			142 56
Frank custom house.....	415 26			415 26
Humboldt Dominion lands office.....		178 62		178 62
" post office, &c.....	3,021 87			3,021 87
Indian Head experimental farm.....		461 85		461 85
" forestry station.....	3,083 19			3,083 19
Lethbridge armoury.....	1,500 00			1,500 00
" court house, custom house and Dominion lands office.....	2,296 69	51 50		2,348 19
" experimental farm.....		11 93		11 93
" immigrant shed.....		310 90		310 90
" post office, &c.....		37 33		37 33
Lloydminster armoury.....	1,500 00			1,500 00
" immigrant shed.....		208 50		208 50
Macleod custom house.....	43 50	25 10		68 10
Maple Creek post office, &c.....	22,424 47			22,424 47
Medicine Hat armoury.....	19,370 34			19,370 34
" court house, post office, &c.....	10,593 45	1 00		10,594 45

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs and Fur- niture.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.				
<i>Saskatchewan and Alberta—Concluded.</i>				
Moosejaw armoury.....	30 00			30 00
" court house and Dominion lands office.....	21,831 05	103 75		21,939 80
" post office, &c.....	1,164 48	430 96		1,595 44
North Battleford custom house.....	421 55			421 55
" immigrant building.....		221 80		221 80
Prince Albert Dominion lands and registry offices.....	7,608 31	3,66 74		7,975 10
" immigrant building.....		23 00		23 00
" penitentiary.....	28,779 13			28,779 13
" post office, &c.....	5 00	1,305 20		1,310 20
Red Deer court house and Dominion lands office.....	1,794 15	9 50		1,803 65
Regina clerk of works office.....		4 00		4 00
" Dominion lands office.....		62 71		62 71
" immigrant building.....		318 42		318 42
" post office and custom house.....	50,221 44	232 31		50,488 75
Saskatoon immigrant building.....		219 00		219 00
" post office.....	45,893 62	161 45		46,055 07
Stettler immigrant building.....		10 00		10 00
Strathcona drill hall and armoury.....	3,000 00			3,000 00
" immigrant building.....	2,000 00	127 90		2,127 90
" post office, &c.....	10,500 00			10,500 00
Swift Current immigrant building.....		324 50		324 50
Vegreville immigrant building.....		62 02		62 02
Vermillion immigrant building.....		252 88		252 88
Wetaskiwin post office, &c.....	5,049 75			5,049 75
Wilkie temporary immigrant hall.....	2,763 00			2,763 00
Yorkton Dominion lands office.....		8 30		8 30
" post office, &c.....	9,599 53			9,599 53
Heating, lighting, water, &c., for all buildings in Saskat- chewan and Alberta (for details see page 37).....			5,136 65	5,136 65
Totals, Saskatchewan and Alberta.....	357,519 13	8,175 44	54,466 70	420,161 27
<i>British Columbia.</i>				
Agassiz experimental farm.....		15 00		15 00
Athlin post office, &c.....		48 00	103 59	151 59
Bridestville custom house.....	433 15			433 15
Chilliwack post office, &c.....	51 10			51 10
Cranbrook.....	9,138 50			9,138 50
Cumberland.....	31,323 43			31,323 43
D'Arcy island leper station.....	1,481 00			1,481 00
Duncan post office, &c.....	9 65			9 65
Fernie.....	15,469 57			15,469 57
Grand Forks custom house.....	325 35			325 35
" post office, &c.....	3,000 00			3,000 00
Kamloops.....	2 70	393 75		396 45
Ladysmith.....	30,044 74			30,044 74
Myncester custom house.....	325 05			325 05
Nanaimo post office, &c.....	2,988 31	141 20		3,129 51
Nelson cattle quarantine station.....	535 00			535 00
" post office, &c.....	61 10	333 47		394 57
New Westminster fisheries and indian office.....		21 90		21 90
" post office, &c.....	1,436 10	3,668 19		5,104 29
Prince Rupert.....	946 21			946 21
Revelstoke post office and custom house.....	56 10	6 20		56 30
Rossland armoury.....	2 00	59 72		61 72
" cattle quarantine station.....	18 00			18 00
" post office, &c.....	49 15	339 95		389 10
Vancouver examining warehouse.....	75,410 60	605 37		76,015 97
" power for machinery.....			45 29	45 29
" immigrant shed.....	241 67	104 10		345 77
" post office (old).....	329 82	2,930 63		3,260 45
" power for machinery.....			67 55	67 55
" (new).....	149,955 25			149,955 25
Vernon post office, &c.....	2,807 57			2,807 57
Victoria cattle quarantine station.....	27 94			27 94
" immigration building, including site.....	41,482 70			41,482 70
" marine and indian offices.....		517 18		517 18
" post office.....	18,434 22	2,316 62		20,750 84
" power for machinery.....			281 72	281 72
" (old).....	135 20	306 76		441 96
William's Head quarantine station.....	26,303 38	180 00		26,486 38
Heating, lighting, water, &c., for all buildings in British Columbia (for details see page 37).....			41,247 37	41,247 37
Totals, British Columbia.....	412,821 56	11,988 04	41,745 52	466,555 12

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS—Continued.					
<i>Yukon Territory.</i>					
Dawson Commissioner's office.....		24,135 77			24,135 77
Heating, lighting, water, &c, for all buildings in Yukon Territory (for details see page 37).....				82,497 37	82,497 37
Totals, Yukon Territory.....		24,135 77		82,497 37	106,633 14
PUBLIC BUILDINGS GENERALLY.					
Advertising tenders for coal, Dominion buildings.....				1,707 30	1,707 30
Printing, stationery, instruments, travelling, &c.....				15,929 48	15,929 48
Salaries of resident clerks of works.....				20,626 92	20,626 92
Totals, Public Buildings Generally.....				38,263 70	38,263 70
HARBOURS AND RIVERS.					
<i>Nova Scotia.</i>					
Abercrombie Point wharf.....		1,855 11			1,855 11
Amherst Point wharf.....			979 14		979 14
Amiro's Hill wharf.....		989 67			989 67
Anderson's Cove, breakwater.....		53	3,033 57		3,033 57
Annapolis, ice piers.....		12,895 53			12,895 53
Argyle Head wharf.....		800 00			800 00
Arisaig breakwater.....			2,559 89		2,559 89
Avonport wharf.....			522 88		522 88
Baddeck wharf, improvements.....		1,851 15			1,851 15
Baddeck River, shear dams at Big Bad-deck.....		599 95			599 95
Bailey's Brook, harbour improvements.....		4,143 88			4,143 88
Barachois training pier.....		1,098 61			1,098 61
Barrington Passage.....			199 68		199 68
Bass River wharf.....			177 52		177 52
Battery Point breakwater.....		466 00			466 00
Bay Creek wharf.....			39 59		39 59
Bayfield breakwater.....			1,188 96		1,188 96
Bay St. Lawrence boat harbour.....		22,230 75			22,230 75
Bear Trap Cove breakwater.....			599 69		599 69
Beaver River breakwater.....		2,000 02	471 53		2,471 55
Belliveau Cove harbour.....			1,999 21		1,999 21
Belfry Gut channel.....			300 65		300 65
Big Bras d'Or wharf.....			150 0		150 0
Big Harbour wharf.....			19 81		19 81
Blue Rock breakwater.....		164 33	248 78		413 11
Bluff Head breakwater.....		2,005 17			2,005 17
Breton Cove, extension of breakwater.....		5,890 50			5,890 50
Broad Cove marsh.....			20 73		20 73
Canada Creek breakwater.....		621 66			626 66
Cape Auger breakwater.....			99 87		99 87
Cape North, wharf at Sugar Loaf, Aspy Bay north.....		583 15			583 15
Cape St. Mary breakwater.....		9,502 50			9,502 50
Caribou Island causeway.....		5,118 99			5,118 99
Castle Bay wharf.....		362 27			362 27
Charlesville.....			280 00		280 00
Chegoggin Point wharf.....		998 76			998 76
Chester.....	113 80				113 80
Cheticamp.....			432 70		432 70
Cheverie breakwater.....		3,029 83			3,029 83
Church Point wharf.....			2,400 00		2,400 00
Clark's harbour.....		4,495 92			4,495 92
Cow Bay (Port Morien) breakwater.....		8,150 37			8,150 37
Cow Bay Run breakwater.....		2,350 24			2,350 24
Cribbin's Point wharf.....			1,635 48		1,635 48
Cullogen breakwater.....			438 30		438 30
David's Cove breakwater wharf.....		2,497 90			2,497 90
Deep Brook pile wharf.....		1,193 73			1,193 73
Delaps Cove.....			2,137 33		2,137 33
Devil's Island breakwater.....		151 41			151 41
Digby Harbour improvements.....	5,255 84	44,521 15			49,776 99
Diligent River breakwater.....		367 77			367 77
Dublin shore breakwater pier.....		27 94			27 94
Duncan's Cove breakwater.....		24 91			24 91
East Dover.....			198 94		198 94

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Nova Scotia—Con.					
Eastern Passage, Halifax Harbour.....		4,979 61			4,979 61
East Green Harbour, wharf, &c.....		1,299 54			1,299 54
East Harrigan.....			800 00		800 00
East Jeddore wharf.....		946 26			946 26
East Port Hebert pier.....		1,247 00			1,247 00
East River Sheet Harbour.....	29 00		157 82		186 82
East River (Pictou Co.) survey.....	3,438 09				3,438 09
Eatonville (3 Sisters) breakwater on north side of bar.....		4,494 22			4,494 22
Englishtown.....			199 83		199 83
Fort Lawrence.....		4,941 56			4,941 56
Fourchu.....	5,047 50				5,047 50
Fox Island, beach protection.....		1,052 62			1,052 62
Freeport.....			443 92		443 92
Georgetown wharf.....		1,499 28			1,499 28
Glace Bay, assistance towards harbour improvements.....		3,835 98			3,835 98
Glace Bay, beach protection.....		9,415 72			9,415 72
Grand Etang.....		10,513 53			10,513 53
Grand Narrows.....			35 23		35 23
Grass Cove (Iona) Little Bras d'Or Lake.....		982 66			982 66
Gulf Shore breakwater.....		2,409 85			2,409 85
Habitant River, wharf at Canning.....		2,763 17			2,763 17
Halifax graving dock.....				10,000 00	10,000 00
Hells' Harbour.....			7,502 66		7,502 66
Hantsport.....			498 30		498 30
Harbour Bouche wharf.....		1,132 15			1,132 15
Harbourville.....			385 92		385 92
Hampton breakwater.....		30 59			30 59
Inverness (Broad Cove mines).....		910 96			910 96
Isaac's Harbour.....			21 15		21 15
Jersey Cove or Eel Cove.....			5 16		5 16
Joggins' Mines breakwater.....		3,089 91			3,089 91
Johnston's Harbour.....		1,099 44			1,099 44
Jordan Bay.....			21 24		21 24
Judique boat landing.....		1,200 00			1,200 00
" breakwater at McKay's Point.....			1,358 99		1,358 99
Kelly's Cove.....		4,299 99			4,299 99
Kennington Cove.....			500 32		500 32
Ketch Harbour.....		2,001 33			2,001 33
L'Ardoise breakwater.....			978 17		978 17
La Have channel.....	3,287 66				3,287 66
La Have Island.....	500 00				500 00
Larry's River.....			50 00		50 00
Laurencetown (east) Conrad's Cove.....		1,198 23			1,198 23
Litchfield breakwater.....			144 74		144 74
Little Barachois.....			495 00		495 00
Little Brook.....			100 04		100 04
Little Harbour wharf.....		2,932 02			2,932 02
" Narrows wharf.....		40 36			40 36
" River Harbour wharf.....		2,000 00			2,000 00
" River wharf.....		32 06			32 06
Liverpool.....	8,425 91				8,425 91
Livingston's Cove.....			444 99		444 99
Lockeport.....	6,739 37				6,739 37
Louisburg.....	9,624 23				9,624 23
Lower Jordan Bay.....	2,381 94				2,381 94
Lower Selma wharf.....		6,185 60			6,185 60
Lower West Pubnico.....	499 97				499 97
Lunenburg.....	71,234 54				71,234 54
McKinnon Harbour.....	19,602 51				19,602 51
McNair's Cove.....			1,809 75		1,809 75
McPherson's Cove (Great Bras d'Or) wharf.....		201 38			201 38
Mabou.....	101,230 43		2,495 74		103,726 17
Maheue Bay.....	87,353 57				87,353 57
Malignant Cove.....		2,765 63	1,221 68		3,987 31
Manthorn's Cove, removal of boulders.....			500 00		500 00
Marble Mountain, approach.....		401 00			401 00
Margaree Harbour.....			758 66		758 66
" Island.....		100 00	271 92		371 92
" River shear dams.....		2,796 83			2,796 83
Margaretville, extension of pier.....		2,581 13			2,581 13
Martin's Brook.....	290 96				290 96
Merigomish wharf.....		340 25			340 25
Meteghan River wharf.....			3,000 00		3,000 00

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Nova Scotia—Con.					
Middle Country Harbour.....			585 00		585 00
Middle River (lower).....		1,997 15			1,997 15
" shear dams.....		432 57	99 99		532 56
Middle West Pubnico.....	500 00				500 00
Minasville (Dalrymple Point).....		106 48			106 48
Minudie.....			249 67		249 67
Mira River wharfs.....		414 54			414 54
Monk's Head.....			341 20		341 20
Morden.....			23 80		23 80
Moser River.....	17,713 79				17,713 79
Musquodoboit Harbour, ballast wharf.....		287 82			287 82
Negumteuh, wharf extension.....		477 50			477 50
Neil's Harbour.....		778 76			778 76
New Glasgow.....		4,296 04			4,296 04
Noel wharf addition.....		1,977 08			1,977 08
North Shore (Victoria Co.).....			99 95		99 95
North River (St. Ann's).....		968 53			968 53
Osborne wharf.....		1,308 61			1,308 61
Owl's Head wharf.....		1,947 58			1,947 58
Oyster Pond.....		3,337 44			3,337 44
Parker's Cove, improvements.....		955 98			955 98
Parrsboro' Harbour.....		7,568 00			7,568 00
" beach protection.....			285 40		285 40
Pereaux (Delhaven).....			89 28		89 28
Petite Rivière, Lunenburg Co.			606 65		606 65
Pictou Bar.....	2,070 14				2,070 14
Pictou Island.....		821 90			821 90
Pleasant Harbour.....		740 74			740 74
Poirierville landing pier.....		2,070 50			2,070 50
Portuguese Cove, breakwater.....		10,000 00			10,000 00
Port Dufferin, breakwater at Smiley's Point.....		452 12			452 12
Porter's Lake.....		2,209 13			2,209 13
Port Greville.....			995 67		995 67
Port Hastings wharf.....		158 91			158 91
Port Hawkesbury.....	4,423 76		148 36		4,572 12
Port Hilford.....		5,836 53			5,836 53
Port Hood, closing northern entrance.....	1,408 99	15,000 98			16,409 97
Port Hood, wharf repairs.....			1,199 96		1,199 96
Port Joli West, breakwater (Herring Rocks).....		3,000 03			3,000 03
Port Lorne, breakwater at east side of harbour.....		2,958 86			2,958 86
Port Maitland breakwater.....		1,840 54			1,840 54
Port Mouton.....	3,775 84				3,775 84
Port Mulgrave (Pirate Cove).....	1,394 40				1,394 40
Port Royal (Madame Island).....		4,916 35			4,916 35
Pubnico Head wharf repairs.....			499 88		499 88
Pugwash Harbour.....		4,498 44			4,498 44
Quoddy Island wharf.....		901 77			901 77
Rabbit Island breakwater.....		3,266 31			3,266 31
Red River.....			557 79		557 79
Rivière Hébert.....			215 22		215 22
Round Hill wharf.....		323 05			323 05
Sandy Cove wharf.....		3,945 08			3,945 08
Sanford.....			104 67		104 67
Saulnierville wharf.....			1,499 69		1,499 69
Scotch Cove (White Point) breakwater.....		29,329 66			29,329 66
Sherbrooke.....	5,792 46				5,792 46
Ship Harbour.....	15,618 45				15,618 45
Short Beach breakwater.....		1,992 25			1,992 25
Skinner's Cove.....	1,216 72	1,216 73			2,433 45
South Ingonish.....	7,722 46				7,722 46
South Lake (Lakevale).....	3,348 72	3,348 72			6,697 44
Spry Harbour.....		740 74			740 74
St. Mary's River.....			507 30		507 30
Summerville.....			392 95		392 95
Sydney Harbour, wharf on south arm near Whitney Pier.....		775 91			775 91
Tancook Island breakwater on south-west side of South East Cove.....		21,036 42			21,036 42
Tangier Harbour, wharf extension.....		628 02			628 02
Tenacope breakwater addition.....		78 85			78 85
Three Fathom Harbour.....			1,998 56		1,998 56
Tignish, Cumberland Co.....			377 07		377 07
Toney River.....		1,793 02			1,793 02

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Nova Scotia—Continued.</i>					
Tracadie Harbour.....		1,199 67			1,199 67
Trenton.....	4,441 30				4,441 30
Trout River.....			299 92		299 92
Tupperville wharf.....		1,275 31			1,275 31
Upper Port Latour.....			511 12		511 12
Upper Prospect breakwater.....		3,236 98			3,236 98
Wallace Bridge wharf.....		1,315 51			1,315 51
Harbour.....			1,977 93		1,977 93
Washabuck Centre.....			199 98		199 98
Lower.....			14 25		14 25
West Advocate breakwater.....		150 27			150 27
West Berlin.....			219 69		219 69
Western Head breakwater.....		1,094 40	775 95		1,870 35
West Head (Cape Sable Island).....		989 21			989 21
Wesport wharf.....		25 34			25 34
White Point, Victoria Co.			150 00		150 00
Windsor.....	4,646 22		400 00		5,046 22
Woods Harbour.....	3,000 00				3,000 00
Wolfeville.....			300 00		300 00
Wreck Cove.....			199 99		199 99
Yarmouth.....	135,691 88		1,003 76		136,695 64
Yarmouth marine slip.....	315 39				315 39
Generally.....	29,950 71			2,796 24	32,745 95
Totals, Nova Scotia	568,116 61	382,547 10	65,725 54	12,796 24	1,029,185 49
<i>Prince Edward Island.</i>					
Annandale.....	1,364 82				1,364 82
Bay Fortune wharf.....			497 39		497 39
Bay View pier.....			194 60		194 60
Belfast pier.....			1,210 18		1,210 18
Belle River breakwater.....			268 07		268 07
Chapel pier.....			210 88		210 88
Charlottetown (Marine and Fisheries wharf).....			528 98		528 98
Crapaud (Victoria) wharf.....	7,181 59		256 86		7,438 45
Franklin Point, North River, wharf.....		30 33			30 33
Graham's Pond pier.....			1,000 16		1,000 16
Hickey's pier.....			1,350 96		1,350 96
Higgins Shore pier.....		1,680 83			1,680 83
Hurd's Point wharf.....			652 77		652 77
Lewis Point (Cardigan) pier.....			567 91		567 91
Long Point breakwater.....		158 67			158 67
McPherson's Cove wharf.....	1,443 40	3,176 50			4,619 90
Murray Harbour.....	713 96				713 96
Murray River.....	3,493 07				3,493 07
Muninigash Harbour breakwater.....		1,468 42			1,468 42
Morel River wharf.....			3 99		3 99
Mount Stewart wharf.....		2,216 28	19 40		2,235 68
Naufrage Pond.....			65 42		65 42
New London breakwater.....			688 96		688 96
Nine Mile Creek wharf.....			650 57		650 57
North Cardigan pier.....			80 84		80 84
Point Prim wharf.....			47 40		47 40
Port Selkirk pier.....			232 06		232 06
Pownal.....	2,015 53				2,015 53
Rustico Harbour, breakwater, north side.....		741 11			741 11
St. Mary's Bay pier.....			502 58		502 58
St. Peter's Bay breakwater.....		13,900 00	75 00		13,975 00
Souris Harbour.....	1,234 26				1,234 26
Knights Point breakwater.....			4,162 09		4,162 09
Sturgeon pier.....		720 21			720 21
Summerside Harbour, breakwater.....		74,804 00			74,804 00
Tignish, protection piers.....		149 61			149 61
breakwater.....			977 20		977 20
Vernon River bridge, approach to pier... Victoria (see Crapaud).....		74 90			74 90
West Point wharf.....			1,074 89		1,074 89
Wood Island Harbour breakwater.....		1,597 22			1,597 22
Generally.....	14,975 62	2,379 60		902 62	18,257 84
Totals, P. E. Island.....	32,422 25	103,097 68	15,319 16	902 62	151,741 71

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>New Brunswick.</i>					
Anderson's Hollow wharf.....			280 27		280 27
Baie du Vin (Northumberland Co.)....			15 00		15 00
Bathurst.....	5,161 14				5,161 14
Beaver Harbour wharf.....		4,998 88			4,998 88
Belas Basin (<i>see</i> Mace's Bay).					
Black Harbour.....	845 59				845 59
Buctouche Beach.....		3,773 35			3,773 35
Campbellton wharf.....		19,964 42			19,964 42
Cape Bald breakwater pier.....		2,806 56			2,806 56
Cape Tormentine.....		9,226 00			9,226 00
Carquet wharf.....	15 00	2,786 45			2,801 45
Chance Harbour.....			350 00		350 00
Chatham.....			248 95		248 95
Chockfish, extension of breakwater....		1,499 95			1,499 95
Clifton (Stonehaven).....	2,010 04	2,000 69			4,010 73
Cumming's Cove, Deer Island wharf....		44 52			44 52
Dalhousie Harbour.....	25,175 49	6,609 90			31,785 39
Dorchester wharf.....		17,521 13			17,521 13
Dover, Petitcodiac River.....		2,631 22			2,631 22
Durham.....			30 00		30 00
East Dover.....	3 55				3 55
Edgett's Landing wharf.....		1,037 21			1,037 21
Edmonton wharf.....			95 44		95 44
Flewelling's wharf.....	319 14				319 14
Gardiner's Creek.....			289 75		289 75
Gaspereaux River.....	29,683 54				29,683 54
Grande Anse breakwater.....		3,239 81			3,239 81
Grassey Island.....	4,955 00				4,955 00
Great Salmon River, groyne and breakwater combined.....		8,728 40			8,728 40
Hampton.....	1,528 05				1,528 05
Harvey bank.....		510 08			510 08
Heron Island wharf.....		1,569 67			1,569 67
Kouchibouguac Harbour improvements.		2,489 09			2,489 09
Lameque wharf.....		2,499 63			2,499 63
L'Eté.....	933 26				933 26
Loggieville.....	14,498 10				14,498 10
Long Island (Kenebecasis).....	1,577 07				1,577 07
Lorneville breakwater wharf.....		394 36			394 36
Lower Newcastle wharf.....		2,827 18			2,827 18
Mace's Bay wharf.....			599 18		599 18
Madawaska River at Edmundston.....		10,771 78			10,771 78
Maguapit Lake.....	49,166 85				49,166 85
Main River.....			150 13		150 13
Mills Point wharf.....		17,023 90			17,023 90
Miramichi River.....	28,774 05				28,774 05
Miscou.....		25 15			25 15
Mispec breakwater.....		7,499 25			7,499 25
Moncton wharf.....		393 47			393 47
Moss Glen wharf.....	129 77				129 77
Murphy wharf.....	733 86				733 86
Neguac.....			48 49		48 49
New Mills wharf.....		14 22			14 22
North Head breakwater (Grand Manan)		21,979 59			21,979 59
Oak Bay.....	952 28				952 28
Oak Point wharf.....		339 03			339 03
Petit Rocher breakwater.....		17,223 86			17,223 86
Pink Rock (Shepody Bay).....		2,177 74			2,177 74
Pointe du Chene breakwater.....		2,470 85	5,504 14		7,974 99
Point Wolfe wharf.....			498 12		498 12
Quaco Harbour, extension of east pier..		2,137 50			2,137 50
Quaco West.....			77 98		77 98
Rexton (Kent Co.).....			549 49		549 49
Reid's Point wharf.....	351 92				351 92
Richibucto Harbour—					
Richibucto wharf.....	\$ 2,499 12				2,499 12
Munic wharf.....	1,560 75				1,560 75
Sawdust wharf.....	5,059 00				5,059 00
Richibucto Cape.....		9,118 87			9,118 87
Richibucto Harbour.....		5,186 32			5,186 32
River St. John and tributaries, improvements—		12,900 07			12,900 07
Lower St. John, snagging..	713 10				713 10
Upper ..	1,488 07				1,488 07

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
New Brunswick—Con.					
River St. John and tributaries, improvements—					
Edmundston.....	\$ 571 10				
Little River.....	456 58				
Maguapit Lake.....	49 20				
Wapskehegan.....	484 45				
Grand Falls.....	698 24				
Nictau Lake.....	141 00				
Grand River.....	189 50				
Emmerson's Falls.....	145 45				
Gaunce breakwater.....	499 95				
Iriquois River.....	199 71				
Water's breakwater.....	381 91				
Sisson Flat.....	350 00				
Trout River.....	197 95				
Cross Lake Rapids.....	150 00				
Indian Point wharf.....	74 38				
Burton wharf.....	106 91				
Vasseur.....	72 85				
		6,970 35			6,970 35
River St. John, wharfs in tide waters (contributions to local government)—					
Burton low water wharf.....	\$ 929 75				
Carters wharf.....	301 88				
Chipman wharf.....	467 50				
Ketchums wharf.....	354 75				
Mouth of Jemseg wharf.....	317 13				
Roberts wharf.....	393 23				
Upper Jemseg.....	1,010 78				
Upper Gagetown.....	486 00				
Waterboro low water wharf	240 00				
Wrights wharf.....	509 23				
		5,010 25			5,010 25
River St. John, construction of wharfs—					
Long Island.....	\$ 894 31				
Kennedy's flat.....	237 00				
Mather's Island.....	543 33				
Chase wharf, low water	1,662 87				
Chase Point.....	1,062 31				
Oromocto high water.....	4,530 14				
McGowan (Sheffield).....	2,719 11				
Maugerville.....	2,941 96				
Rothsay.....	3,970 49				
Generally.....	212 22				
		19,674 24			19,674 24
River St. John, survey between Fredericton and Woodstnek.....		3,978 85			3,978 85
St. Andrews.....	10,230 16	218 26			10,448 42
St. George.....	4,396 70		3,918 95		8,315 65
Sackville wharf.....		939 32			939 32
St. John Harbour—					
Sand Point.....	133,204 86	55,312 63	34 20		188,551 69
Rodney Slip.....	14,091 80				14,091 80
York Point.....	8,372 10				8,372 10
Beacon Bar.....	468 50				468 50
Ballast wharf.....	4,023 20				4,023 20
Partridge Island.....	1,372 80	144 07			1,516 87
Outer channel.....	61,275 08				61,275 08
Negro Point breakwater.....			19,957 24		19,957 24
St. John West wharf.....		135 00			135 00
Courtney Bay examination.....		2,453 44			2,453 44
Fort Dufferin.....			2,579 47		2,579 47
St. Louis wharf.....			44 53		44 53
St. Paul (Lower Caraquet).....		140 00			140 00
Scottstown.....			17 57		17 57
Sealeys Shoal.....	3,763 62				3,763 62
Seal Cove (Grand Manan Island).....		22 28			22 28
Shediac wharf.....		28 54			28 54
Shippigan Harbour.....			15 19		15 19
Shippigan Gully.....		2,807 48			2,807 48
Stenehaven (near Clifton).....					
Tabouneitac.....	135 87				135 87
Tracadie.....		1,951 64	499 99		2,451 63
Traverse.....	4,025 14				4,025 14
Tynemouth Creek.....			1,300 00		1,300 00
Welchpool (Campobello Island wharf).....		4,290 67			4,290 67

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>New Brunswick—Con.</i>					
Whitehead (Grand Manan wharf).....	310 37	33 64			344 01
Wilson's Beach (Campobello).....			480 57		480 57
Upsalquitch River.....				10,382 54	40,333 25
Generally.....	29,950 71				
Totals, New Brunswick.....	442,434 61	310,531 36	37,584 65	10,382 51	800,933 16
<i>Quebec.</i>					
Anse à la Barbe breakwater.....		6,974 20			6,974 20
" à Beaufils protection work.....	1,534 91	49 90			1,584 81
" à la Cave, removal of boulders.....			202 60		202 60
" aux Gascons.....		2,598 70			2,598 70
" aux Griffons.....		1,409 46	25 00		1,434 46
" à la Louise.....			100 00		100 00
" à la Grosse Roche (Saguenay).....			941 43		941 43
" à l'Islet pier.....		4,662 62			4,662 62
" St. Jean.....			400 33		400 33
" du Cap (Cape Cove) breakwater.....		2,038 19			2,038 19
Aylmer.....	38 20				38 20
Baie Lavallière.....	144 72				144 72
Baie St. Paul, wharf at Capaux Corbeaux		1,612 41			1,612 41
Barachois de Malbaie.....		5,151 70			5,151 70
Batiscan (R. & O. wharf).....	4 00				4 00
Béancourt (see River Béancourt).					
Belœil guide pier.....			1,151 60		1,151 60
Berthier (en bas) wharf.....			1,390 12		1,390 12
Bic (old wharf).....			599 22		599 22
Bic Harbour, wharf at Pointe à Côté.....		6,504 10			6,504 10
Black Cape (Campbells Beach, Bonaventure Co.)			3 95		3 95
Bonaventure East wharf.....			199 51		199 51
Brière à Manon, removal of boulders.....			25 00		25 00
Cacouna wharf.....		2,500 55			2,500 55
Canton Fabre wharf, Lake Temiscaming			114 28	101 67	215 95
Cap à l'Aigle.....			3 00		3 00
Cap à la Baleine.....			200 00		200 00
Cap Chatte (Anse Blanche).....			25 00		25 00
Cap des Rosiers.....			25 00		25 00
Cap Santé.....			175 11		175 11
Cap St. Ignace.....		566 39			566 39
Caplan (see also St. Charles de Caplan)...			1,575 34		1,575 34
Carleton wharf.....			2,010 44		2,010 44
Capghawaga.....		3,172 18			3,172 18
Cedars wharf (Soulanges Canal).....			979 14		979 14
Cedars wharf (St. Lawrence).....			578 25		578 25
Chambord.....			50 50		50 50
Chateaugay (Lake St. Louis).....		73 25			73 25
Chateau Richer.....			10 00		10 00
Chicoutimi Harbour improvements.....	110 00	49,078 70			49,188 70
Clark City, Seven Island breakwater		9,734 52			9,734 52
Contrecoeur wharf.....		2,000 00			2,000 00
Coteau du Lac wharf.....			1,194 08		1,194 08
Crane Island (north side).....			585 10		585 10
Cross Point.....			162 00		162 00
Dorion (see River Dorion).....					
Doucets Landing.....		1,672 75	214 10		1,886 85
Douglstown pier.....		4,066 60			4,066 60
East Templeton wharf.....	352 57	16 00			520 57
Escoumains pier.....		6,547 50			6,547 50
Fassett.....	1,143 34				1,143 34
Father Point.....			2 2 75		2 2 75
Georgeville wharf.....			1,497 07		1,497 07
Grande Grève.....			25 01		25 01
Grands Méchins.....		10,822 39			10,822 39
Grand Métis.....			304 72		304 72
Grande Rivière de Beupré.....			408 01		408 01
Grande Rivière de Gaspé.....			2,772 78		2,772 78
Grande Vallée.....			145 72		145 72
Grondines.....			23 00		23 00
Grosse Isle, quarantine station wharf.....		6,502 45			6,502 45
Havre de Pêche.....			31 05		31 05
Havre du Ruisseau.....			25 00		25 00
Hopetown.....			398 54		398 54
Hudson.....	7,785 35				7,785 35
Hull wharf.....			442 41	182 50	624 91

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Continued.					
Ileville.....			23 38		230 38
Ile aux Coudres.....			2,193 59		2,193 59
Foins.....	21,263 00				21,263 00
Noix.....	2,249 16		1,168 53		3,417 69
Ile Perrot.....	2,027 00				2,027 00
Ile Perrot, south side.....			597 03		597 03
Ile Verte wharf.....			2,808 52		2,808 52
Ile Verte wharf west side of river.....		2,199 81			2,199 81
Jersey Cove (Co. Gaspé).....			50 00		50 00
Kamouraska wharf.....			36 54		36 54
Knowltons Landing.....			934 20		934 20
Lachine.....	88 33				88 33
Lake Aylmer (Garthby).....		1,261 92			1,261 92
Lake Deschênes.....	84 00				84 00
Lake Megantic piers—					
Agnes pier.....	\$ 4,520 00				
Moose Bay.....	2,094 28				
Lambton.....		5,959 00	6,614 28		6,614 28
Lake St. John piers—					5,959 00
St. Joseph d'Alma.....	\$ 4 00				
Generally.....	2,871 67				
Lake St. John dredging—			2,875 67		2,875 67
Roberval.....	\$ 5,150 99	5,150 99			5,150 99
Laprairie ice piers.....		6,847 50			6,847 50
La Tuque, wharf on River St. Maurice.....		2,834 05			2,834 05
Lavaltrie wharf.....		4,305 97			4,305 97
Le Petit Débarquement, wharf on north side of St. Lawrence.....		201 50			201 50
Les Eboulements.....			128 85		128 85
Lévis graving dock.....	363 76		252 59	20,891 10	21,507 45
Lévis deep water wharf, &c.....		50,359 62			50,359 62
L'Islet wharf.....			820 56		820 56
Little Pabos.....			25 00		25 00
Little River East.....			218 55		218 55
Lotbinière and Portneuf counties—					
Lotbinière.....	\$ 982 09				
Les Ecureuils.....	693 38				
Ste. Emélie.....	469 02				
Louiseville <i>(see Rivière du Loup en haut)</i>		2,144 49			2,144 49
Magdalen Island breakwaters—					
Amherst.....	\$ 1,122 58				
Bassin.....	1,182 10				
Grindstone.....	1,688 03				
House Harbour.....	200 00				
Pointe à Elie.....	6,529 53				
Generally.....	4,382 23				
Maguasha.....		15,101 47			15,101 47
Maille (Gaspé) boat shelter.....		871 22	350 30		350 30
Maria wharf extension.....		2,471 71			871 22
Maria Cape.....			742 15		2,471 71
Maskinongé <i>(see River Maskinongé)</i>					742 15
Matane breakwater.....			2,473 35		2,473 35
Masson.....			377 02		377 02
Mille Vaches.....			33 75		33 75
Mission Point (Bonaventure Co.).....	4,335 48				4,335 48
Mistook wharf.....			1,980 04		1,980 04
Montello.....	309 00		12 50		321 50
Montmagny, wharf in the basin.....		11,813 13	96 56		11,909 69
Montreal Harbour.....		36,396 23	1,259 83		37,656 06
Murray Bay.....			1,948 93		1,948 93
Natashquan breakwater pier.....		35 66			35 66
New Carlisle wharf.....			4,648 56		4,648 56
West.....			449 74		449 74
Newport.....			408 35		408 35
New Richmond.....		2,001 23			2,001 23
Nicolet Harbour.....	10,073 90		5,843 18		15,917 08
Notre Dame de la Salette.....				756 33	756 33
Notre Dame du Portage.....		5,398 18			5,398 18
Papineauville.....	309 00				309 00
Paspébiac East breakwater.....		3,143 11			3,143 11
wharf.....			1,709 07		1,709 07
Percé wharf (South Cove).....		218 3			218 36

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Continued.					
Petie Décharge (Lake St. John).....		996 77			996 77
Petite River Bonaventure.....		557 62	983 26		1,540 88
" Madeleine.....			75 50		75 50
Petite Tourelle.....			25 00		25 00
Pointe à Brousseau.....		229 15			229 15
Pointe aux Esquimaux.....			303 42		303 42
Pointe aux Trembles (Portneuf).....		16,103 09			16,103 09
" Fortune.....			279 01		279 01
" Claire.....			150 00		150 00
" Maquereau.....			200 00		200 00
" Piehé (Témiscaming).....		9,501 31			9,501 31
" St. Charles.....	22 16				22 16
Port Daniel wharf.....			2,498 70		2,498 70
" West.....			399 92		399 92
" Lewis wharf.....			1,016 78		1,016 78
" St. Francis.....	2,757 56		39 85		2,797 41
Poupore.....	2,821 22				2,821 22
Quebec Harbour.....		214,757 85			214,757 85
" Custom house wharf.....	1,006 19		1,624 21		2,630 40
" Drolet's Basin.....	2,562 22				2,562 22
Repentigny wharf.....		1,584 44			1,584 44
Rigaud.....	7,144 20				7,144 20
Rimouski approach.....	12,490 16				12,490 16
" wharf.....		12,863 83			12,863 83
Rivières Ashouapmouchouan and Peribonka—					
Mistassini.....	\$ 795 86				
Peribonka.....	2,212 84				
St. Félicien.....	1,361 91				
St. Prime.....	501 04				
		4,931 65			4,931 65
Rivière aux Renards.....			25 00		25 00
" à la Pipe.....			3,014 80		3,014 80
" Batiscan (Manitou Rapid).....			81 00		81 00
" Batiscan (mouth).....	18,930 75				18,930 75
" Bécancour.....	17,086 75				17,086 75
" Blanche.....		333 17			333 17
" Blondelle.....			656 68		656 68
" Bonaventure.....		18,492 50			18,492 50
" Chateauguay.....	12,999 65				12,999 65
" Chicot.....	1,228 30				1,228 30
" du Lièvre lock.....	618 41		2,257 92	2,229 23	5,105 56
" to pay W. J. Poupore.....		32,280 88			32,280 88
" du Lièvre piers—					
La Salette.....	\$ 726 17				
High Falls.....	239 31				
Val des Bois.....	395 42				
Poupore lock.....	25 20				
N. D. du Laus.....	471 89				
		1,827 99			1,827 99
" Dorion.....	22,096 50				22,096 50
" des Bergeronnes.....	1,522 44				1,522 44
" du Loup (Fraserville).....			4,663 32		4,663 32
" des Petites Capucines.....			299 86		299 86
" du Loup en haut.....	30,130 20		6 00		30,136 20
" Gatineau.....	905 70				905 70
" Girard.....		999 64			999 64
" du Sud.....			428 79		428 79
" Godefroy.....	8,039 25		650 03		8,689 28
" Jesus.....	20,437 58				20,437 58
" L'Assomption.....	15,233 80	4,240 70			19,474 50
" L'Assomption, St. Paul de Joliette.....			341 00		341 00
" Maskinongé.....	26,355 81				26,355 81
" Ottawa (Blanche shoals).....	17,527 60				17,527 60
" Ottawa (Angers).....		40 29			40 29
" Ouelle.....	6,959 39				6,959 39
" Ouelle wharf.....			2 717 01		2,717 01
" Richelieu ice piers.....		356 59			356 59
" Richelieu improvements.....	29,119 60				29,119 60
" Saguenay.....	35,656 98				35,656 98
" Saguenay wharf at Rivière aux Vases.....		2,797 64			2,797 64
" Sault au Mouton.....	998 52				998 52
" St. Francis at Richmond.....	50,751 53		2,618 24		53,369 77
" St. Francis (St. Francis du Lac).....	141 02	10,999 72	40 25		11,180 99

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Quebec—Continued.					
Rivière St. Louis improvements, ...	9,050 72				9,050 72
" St. Louis, Head Gate, ...				120 00	120 00
" St. Maurice, channel between Grandes Piles and La Tuque, ..	15,888 17				15,888 17
" St. Maurice (mouth), ...	17,434 00				17,434 00
" Vapeur (Méchins), ...			200 13		200 13
" Trois Pistoles, ...	999 43				999 43
" Verte, ...			2,189 34		2,189 34
Roberval wharf, ...			924 58		924 58
Ruisseau LeBlanc, ...		1,191 40	350 00		1,541 40
" à Patates, ...			50 00		50 00
" à Sem, ...			300 00		300 00
St. Alexis wharf, ...		2,509 39	124 19		2,633 58
St. Alphonse de Bagotville, ...		18,443 92	96 97		18,540 89
St. André de Kamouraska, ...		278 01			278 01
St. Andrews wharf, ...		400 00			400 00
Ste. Anne de Chicoutimi, ...			4,001 25		4,001 25
" de la Pérade, ...		1,693 46			1,693 46
" de la Poenière, ...		29 53			29 53
" des Monts, ...	448 50	4,544 44			4,992 94
" de Sabrevois, ...			1,000 77		1,000 77
St. Blaise, ...			208 00		208 00
St. Charles Borromée, ...		1,034 56			1,034 56
" du Caplan, ...		5,008 72			5,008 72
" de Limoilou, ...		2,698 80			2,698 80
" de Richelieu, ...		2,169 29			2,169 29
Ste. Croix, ...		2,908 37			2,908 37
Ste. Eloi (Rivière à la Loupe), ...		1,009 84			1,009 84
Ste. Fidace, ...	679 43		49 37		728 80
Ste. Famille d'Orleans, ...			88 16		88 16
St. François de Sales, ...			505 18		505 18
" d'Orleans, wharf, ...		15,169 00			15,169 00
Ste. Emelie (Leclercville), ...		324 20			324 20
St. Fulgence wharf, ...		1,666 97			1,666 97
St. Gédéon wharf, ...			1,030 51		1,030 51
St. Godefroy wharf, ...			1,393 78		1,393 78
St. Ignace de Loyola, ...		5,094 91			5,094 91
St. Irénée wharf, ...			11 00		11 00
St. Hilaire (River Richelieu), ...		4,153 78			4,153 78
St. Jean des Chaillons, ...		6,140 27			6,140 27
St. Jean, d'Orleans, wharf, ...	2,835 28	2,394 34			5,229 62
St. Joseph, Letellier, ...		4,307 22			4,307 22
St. Jerome wharf, ...		4,001 26			4,001 26
St. Lambert, ...			52 28		52 28
St. Laurent, d'Orleans, wharf, ...			7,109 83		7,109 83
St. Mathias, ...			21 70		21 70
St. Michel de Bellechasse wharf, ...			1,842 44		1,842 44
St. Nicolas wharf, ...			123 39		123 39
St. Omer landing pier, ...		10,366 06			10,366 06
St. Pierre les Bequets, ...	7,878 00	14,130 10			22,008 10
St. Placide, ...	33,246 48				33,246 48
St. Siméon, ...		17,772 75			17,772 75
St. Sulpice wharf, ...		5,502 58			5,502 58
St. Zotique, ...		9,081 74			9,081 74
Seal Rock, ...			21 00		21 00
Sorel (Ste. Anne), ...			1,256 14		1,256 14
" (opposite Elizabeth street), ...		4 06			4 06
" (harbour), ...		84,237 48			84,237 48
Shigawake, ...		181 30			181 30
Squateck wharf, ...		2,352 82			2,352 82
Tadoussac (Anse à l'Eau), ...			507 51		507 51
" Harbour, ...		418 77			418 77
Terrebonne, ...			435 46		435 46
Three Rivers harbour, ...	81 00	14,230 81	66 46		14,378 27
Trois Pistoles wharf, ...			800 86		800 86
" improvements to harbour, ...		2,500 01			2,500 01
Valleyfield, ...			74 33		74 33
Varennes wharf, ...		10,996 48			10,996 48
Vaudrenil, ...	18,655 98	4,542 97			23,198 95
Verdon, ...	1,744 77		250 99		1,995 76
Villeuve, ...	81 00				81 00
Whitehead (Gaspé Co.), ...			25 00		25 00
Woodman's Beach (Bonaventure), ...			499 50		499 50
Yamachiche, ...	34,521 70				36 521 70

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Quebec—Concluded.</i>					
Yamaska lock and dam.....			1,117 81	1,596 99	2,714 80
" River.....	28,078 81				28,078 81
" River, landing pier at St. Michel d'Yamaska.....		5,392 35	40 25		5,432 60
Generally.....	33,882 40			20,993 85	54,876 25
Totals, Quebec.....	608,856 62	885,772 12	114,925 35	46,871 67	1,656,425 76
<i>Ontario.</i>					
Allandale wharf.....			127 30		127 30
Amherstburg wharf.....			480 98		480 98
Arnprior wharf.....		874 63			874 63
Bayfield wharf.....			1,800 00		1,800 00
Baysville (South Muskoka River) wharf.....		520 75			520 75
Beaverton, harbour improvements.....		987 16			987 16
Belle River pier.....			990 32		990 32
Bewdley wharf.....		896 91			896 91
Birdsall wharf.....		3,849 10			3,849 10
Black River (Co. Ontario).....		2,998 63			2,998 63
Blanche River improvements.....		11,913 05			11,913 05
Blanche River wharf.....		2,216 41			2,216 41
Blind River.....	18,936 39	1,476 84			20,413 23
Rowmanville.....	2,758 77				2,758 77
Bracebridge.....	3,365 28				3,365 28
Bronte, repairs to piers.....			1,000 00		1,000 00
Bruce Mines pier.....			392 26		392 26
Burlington Channel.....	9,920 10	34,615 58	766 87	3,011 48	48,314 03
Byng Inlet improvements.....		26 82			26 82
Callender wharf extension.....		1,118 23			1,118 23
Cape Croker, wharf addition.....		1,417 33			1,417 33
Chute à Blondeau wharf (Co. Prescott).....		6,903 62			6,903 62
Cobourg Harbour.....	31,935 15	2,681 69			34,616 84
Cockburn Island wharf.....			745 81		745 81
Colborne wharf.....		13,383 00			13,383 00
Colchester, wharf extension.....		94 22			94 22
Colpoys Bay wharf.....			2,414 69		2,414 69
Collingwood harbour.....	50,843 22		82 52		50,925 74
graving dock.....				15,000 00	15,000 00
Crowe's Landing wharf.....			98 59		98 59
Cumberland wharf.....			67 98		67 98
Curtis Landing wharf.....		987 36			987 36
Dawson's Point wharf (Lake Temiscaming).....		951 86			951 86
Detroit River, bank protection.....		4,291 00			4,291 00
Dyer Bay wharf.....			659 47		659 47
Echo Bay wharf.....			816 87		816 87
Fort William (Kaministiquia River).....	377,109 31				377,109 31
Goderich Harbour improvements.....	22,788 69	101,947 29	1,238 85		125,974 83
Gore's Landing wharf.....		287 36			287 36
Grand Bend, piers.....		637 93			637 93
Gravenhurst (Lake Muskoka) wharf.....		2 12			2 12
Griffith's Island (Colpoys Bay) wharf.....		2,598 57			2,598 57
Haldimand.....			25 00		25 00
Haileybury (Lake Temiscaming) wharf.....		604 84	56 00		660 84
Hamilton harbour improvements.....	29,181 70	2,131 31			31,313 01
Hawkestone wharf.....			768 72		768 72
Hawkesbury.....	799 62				799 62
Head River improvements.....		2,848 40			2,848 40
Hilton (St. Joseph's Island) wharf.....			1,691 09		1,691 09
Jeannette's creek.....	12,374 92		125 00		12,499 92
Juniper Island wharf.....		29 20			29 20
Honora wharf.....		2,591 98			2,591 98
Kearney wharf (Muskoka).....		482 27			482 27
Kincardine harbour.....	3,192 00		1,198 33		4,390 33
Kingston harbour.....	3,645 33	213 50			3,888 83
graving dock.....				8,321 11	8,321 11
Kingsville pier.....			991 48		991 48
Lake Nipissing, roller dam at head of French River.....		1,806 92			1,806 92
Lake Nipissing from West Bay to Monteville.....		4,617 61			4,617 66
Lakeport wharf.....		1,088 69			1,088 69
Leamington wharf.....		1,371 70	548 11		1,919 81
Lion's Head wharf.....	2,928 90	6,431 00			9,359 90

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
Ontario—Continued.					
Little Current (Northern channel)....	205,798 55				205,798 55
Little Sturgeon River.....	1,031 43				1,031 43
L'Orignal.....	628 88				628 88
Magnetawan wharf.....		571 57			571 57
Matchedash Bay (Fesserton and Wau- lashene)	21,899 72				21,899 72
McGregor's Creek (Barraek Point, Chat- ham).....		10,023 3			10,023 3
McGregor's Creek, Tecumseh Park, re- vetment wall.....			279 35		279 35
Meaford harbour improvements.....	8,392 77	34,829 87			43,222 64
Michipicoten wharf (Lake Superior)		356 84			356 84
Milland harbour improvements, Tiffin elevator.....	125,020 70				125,020 70
Montreal River (Letchford dam).....		486 82			486 82
Newcastle.....	2,399 54				2,399 54
New Liskeard.....	6,769 59	72 50			6,769 09
Nipissing Village (South River) wharf		877 51			877 51
Nipigon River.....	107,659 45				107,659 45
North Bay wharf.....			268 24		268 24
Oakville wharf.....			510 00		510 00
Orillia wharf.....			50 00		50 00
Oshawa wharf.....			745 44		745 44
Owen Sound harbour.....	24,331 50	724 80			25,056 30
Parry Sound wharf extension.....		4,114 57			4,114 57
Pelee Island, western wharf.....	3,497 61	1,567 52			5,065 13
" wharf on North Bay.....		4,691 16			4,691 16
Penetanguishene.....	25,935 57				25,935 57
Petawawa.....	300 00				300 00
Pictou.....	21,528 63				21,528 63
Pike Creek.....			197 20		197 20
Point Edward.....	27,422 16				27,422 16
Port Arthur.....	3,727 67	116,999 84			120,727 51
Port Bruce.....	5,846 25				5,846 25
Port Burwell harbour improvements.....	17,370 33	5,000 04			22,370 37
Port Colborne.....		12,079 03			12,079 03
Port Elgin.....	2,090 00	42 85			2,132 85
Port Hope.....	11,693 99				11,693 99
Port Rowan wharf.....			420 49		420 49
Port Stanley improvements.....	8,568 98	65,831 17			74,400 15
Port Stanley (old wharf).....			405 59		405 59
Providence Bay, wharf extension.		767 76			767 76
Rainy River.....	9,094 44				9,094 44
Richard's Landing, wharf.....			3,000 00		3,000 00
River Otonabee.....	3,646 01				3,646 01
River Otonabee wharf at Peterboro'...			4,999 33		4,999 33
River Otonabee at Roger's Dam.....			234 08		234 08
River Thames at Chatham.....		5,705 00	2,970		5,954 70
River St. Lawrence, Thousand Islands (Pavillions).....		1,236 27			1,236 27
River St. Lawrence, between Kingston and Brockville.....	875 19				875 19
Roche's Point, wharf.....		514 00			514 00
Robin's Landing, wharf.....			95 33		95 33
Rockland.....	311 04				311 04
Rondeau Harbour.....	8,125 86	28,289 15			36,415 01
Rosseau wharf.....			329 19		329 19
Rossport wharf (Lake Superior)		7,747 50			7,747 50
Ruseomb River.....	6,000 02				6,000 02
Sand Point wharf (Ottawa River)...		4,676 61			4,676 61
Sarnia.....	3,473 99				3,473 99
Sault Ste. Marie.....	87,158 65	801 71	76 13		88,036 49
Seagull (St. Joseph's Island) wharf..		1,785 51			1,785 51
Severn River, Washago.....			431 87		431 87
Shequindah wharf.....			498 48		498 48
Shrewsbury wharf.....			17 40		17 40
Silver Centre (Lake Temiscaming) wharf.		4,482 64			4,482 64
Southampton—Chantry Island.....			3,747 11		3,747 11
Southampton, extension and repairs to town dock.....		40,989 95			40,989 95
South Nation River, improvements.....		9,216 56	99 50		9,316 06
Spanish River, improvements.....	16,908 25	1,962 19			18,870 44
South River (also Nipissing Village)...	2,461 11				2,461 11
Sparrow Lake—Severn River.....		2,599 71			2,599 71
St. Joseph, Lake Huron.....			300 62		300 62
Sturgeon Falls.....	1,352 31				1,352 31

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>Ontario—Concluded.</i>					
Summerstown.....	31,352 70				31,352 70
Sydenham River (North Bank).....	1,295 52		170 15		1,465 67
Tenby Bay, freight shed.....			399 58		399 58
Thessalon, harbour improvements.....		2,298 90			2,298 90
Thorah Island.....	67 00				67 00
Thornbury.....	22,147 28				22,147 28
Tobernory harbour, glance booms.....		2,310 80			2,310 80
Toronto harbour, improvements.....	9,659 21	182,974 94			192,634 15
Treadwell.....			401 75		401 75
Trenton—Dark channel.....	41,110 5				41,110 56
Upper Ottawa River, tributaries, storage dams.....		2,754 20			2,754 20
Victoria Harbour improvements.....	150,151 09				150,151 09
Washago (<i>see</i> Severn River).....			4,763 98		4,763 98
Whitby Harbour improvements.....		3,495 00			3,495 00
White Cloud Island, wharf.....			679 18		679 18
Warton.....	15,372 52				15,372 52
Wingfield Basin.....	49,612 51				49,612 51
Winnipeg River, Throat rapids.....		5,135 41			5,135 41
Wolfe Island.....	1,446 82		18 86		1,465 68
Generally.....	11,323 80			13,735 50	25,059 30
Totals, Ontario.....	1,681,768 61	789,921 22	40,477 79	40,071 09	2,552,238 71
<i>Manitoba.</i>					
Gimli protection wall.....		4,094 31			4,094 31
Ice-landic River.....	3,632 25				3,632 25
Lake Dauphin (Mossy River).....	3,994 91		37 30		4,032 21
Red River (channel at mouth).....	13,563 67				13,563 67
" St. Andrew's Rapids.....	2,607 21	300,023 70			302,630 91
" West Selkirk.....	1,119 46				1,119 46
River Assiniboine (Portage la Prairie).....		5,211 50			5,211 50
St. Laurent.....	362 16				362 16
Selkirk wharf.....			82 00		82 00
Swan Creek.....	5,133 69		16 00		5,150 29
Westbourne.....	459 29				459 29
Winnipegosis, dredging channel at mouth of Mossy River.....	3,109 20				3,109 20
Winnipeg Beach, harbour pier.....		20 99			20 99
" River—Manitou Rapids.....	188 90				188 90
Generally.....	2,909 71			4,992 38	7,902 09
Totals, Manitoba.....	37,080 49	309,350 50	135 90	4,992 38	351 559 27
<i>Saskatchewan, Alberta and Northwest Territories.</i>					
Last Mountain lake.....		1,766 37			1,766 37
Lesser Slave River improvements.....		14,908 61			14,908 61
Old Man's river at McLeod.....		23 38			23 38
North Saskatchewan river, opposite Prince Albert.....	619 54				619 54
Generally.....				3,029 79	3,029 79
Totals, Saskatchewan and Alberta.....	619 54	16,698 36		3,029 79	20,347 69
<i>British Columbia.</i>					
Campbell River wharf.....		1,495 35			1,495 35
Clayoquot wharf.....		2,189 68			2,189 68
Columbia River—					
Above Golden.....	\$ 4,412 76				
At Revelstoke.....	32,083 37				
Columbia River, to reimburse Big Bend Lumber Co.....	36,496 13				36,496 13
Coquitlam River.....	2,384 50				2,384 50
Courtney River improvements.....	993 31	1,582 45			2,575 76

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS—Con.					
<i>British Columbia—Concluded.</i>					
Duncan river, removal of obstruction below Healy's landing.....		2,468 54			2,468 54
Esquimalt graving dock.....				13 671 37	13,671 37
Fraser river ship channel.....	41,091 78	22,912 10			64,003 88
" at Chilliwack.....		2,500 00			2,500 00
" at Matsqui.....	15,209 58	2,281 50			17,491 08
" upper, above Quesnel.....	2,492 10				2,492 10
Fraser river wharfs—					
Pitt River.....	\$ 2,212 80				
East Haney.....	1,647 09				
Donatelli's landing.....	1,650 32				
Dewdney.....	1,850 66				
Brownsville.....	1,638 15				
Hatzic.....	2,298 11				
Rosedale and Agassiz ferry.....	1,787 64				
Port Moody.....	2,692 10				
Port Haney.....	2,044 70				
		17,821 63			17,821 63
Hardy Bay wharf.....			1,981 95		1,981 95
Kootenay River, at Proctor.....	978 33				978 33
Naas river.....	2,601 83				2,601 83
Nanaimo Harbour, north channel.....	3,251 32				3,251 32
" Commercial Inlet.....		2,204 12			2,204 12
Okanagan River, channel between Okanagan Lake and Dog Lake.....	4,621 79				4,621 79
Quatsino wharf.....		1,005 95			1,005 95
Salmon Arm wharf.....	917 91	515 31			1,433 22
Sidney wharf.....		6,989 82			6,989 82
Sook harbour.....	7,196 77				7,196 77
Skeena river improvements.....	12,022 62				12,022 62
Spillumcheen River, at Enderby.....			2,266 90		2,266 90
Stickine river, between Glenora and Telegraph Creek.....	5,175 49				5,175 49
Thompson river improvements.....	12,363 31				12,363 31
Union Bay wharf.....	1,443 95	2,848 48			4,292 43
Upper Lillooet River.....	2,484 01				2,484 01
Vancouver harbour.....	2,004 95				2,004 95
Victoria harbour.....	51,539 01				51,539 01
William's Head quarantine station.....		9,937 39			9,937 39
Woods and Long Lakes, opening boat channel.....	4,936 71				4,936 71
Generally.....	11,693 37			2,984 67	14,678 04
Totals, British Columbia.....	221,898 80	76,752 32	4,248 85	16,656 04	319,556 01
<i>Yukon Territory.</i>					
Lewis and Yukon Rivers, improvements.....		7,824 66			7,824 66
<i>Harbours and Rivers Generally.</i>					
General expenses of staff, &c.....	2,788 08			9,305 39	12,093 47
DREDGES AND DREDGING PLANT.					
Maritime Provinces.....		231,581 08	45,517 13		277,098 21
Ontario and Quebec.....		250,597 92	94,810 63		345,408 55
Manitoba.....		14,998 54	482 70		15,481 24
Saskatchewan and Alberta.....		24,178 58			24,178 58
British Columbia.....		249,449 35	31,171 89		280,621 24
Totals, Dredges and Dredging Plant.....		779,805 47	171,982 35		951,787 82

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Im- provements.	Repairs.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
HARBOURS AND RIVERS— <i>Con.</i>					
SLIDES AND BOOMS.					
Richelieu River (Beloeil).....				133 00	133 00
River Saguenay,.....		1,839 98	562 86	4,828 58	7,231 42
River St. Maurice,.....		27,935 91	123 03	58,679 92	86,742 86
Ottawa district—					
Black River.....		1,653 77	1,538 58		3,192 35
Dumoine River.....			187 86		187 86
Coulonge River.....			1,021 12		1,021 12
Gatineau River.....			2,134 22		2,134 22
Madawaska River.....			1,740 84		1,740 84
Ottawa River.....			4,682 31	25,556 99	30,239 30
Petewawa River.....			868 39		8 8 39
Portage du Fort.....			125 92		125 92
Rivière du Lièvre.....				37 00	37 00
Newcastle district.....				200 00	200 00
Fencelon Falls.....			497 99		497 99
Collection of slides and boom dues.....				2,734 30	2,734 30
Totals, Slides and Booms.....		31,430 60	13,486 12	92,1 9 79	137,086 57

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
ROADS AND BRIDGES.				
Interprovincial bridge, Metapedia.....	10,126 86			10,126 86
Des Joachim's bridge (Ottawa River).....		2,240 11		2,240 11
Chapeau bridge.....		271 60		271 60
Hull and Gatineau bridge.....		255 37		255 37
Portage du Fort bridge.....		495 70		495 70
Pond Creek bridge.....		105 56		105 56
Ottawa city bridges and streets maintained by Government—				
Cartier Square.....			3 30	3 30
Chaudiere bridges and approaches.....		4,582 75		4,582 75
Sappers and Dufferin bridges and Wellington street.....		3 5 45	7,064 94	7,430 39
Lighting all the above.....			2,057 50	2,057 50
Northwest Provinces and British Columbia—				
Edmonton bridge.....		1,094 38		1,094 38
Shellmouth bridge.....	20,442 74			20,442 74
Totals, Roads and Bridges.....	30,549 60	9,410 92	9,125 74	49,106 26
TELEGRAPH LINES.				
<i>Newfoundland.</i>				
Cape Ray (subsidy).....			250 00	250 00
<i>Nova Scotia.</i>				
Cape Breton lines.....	5,967 11	139 44	15,244 07	21,350 62
<i>Prince Edward Island.</i>				
Prince Edward Island and mainland (subsidy).....			10,033 32	10,033 32
<i>New Brunswick.</i>				
Bay of Fundy line.....			2,299 77	2,299 77
Escuminac line.....			682 96	682 96
<i>Quebec (Mainland).</i>				
Father Point (subsidy).....			500 00	500 00
North shore of St. Lawrence, east of Bersimis.....			29,073 40	29,073 40
North shore of St. Lawrence, west of Bersimis.....	6,097 51		12,642 08	18,739 59
Saguenay River lines, southeast side.....	1,682 26			1,682 26
<i>Quebec (Islands).</i>				
Anticosti line.....			5,514 78	5,514 78
Grosse Isle, cable and wire line.....			6,270 17	6,270 17
Isle aux Coudres (subsidy).....			300 00	300 00
Isle aux Grues.....			32 80	32 80
Magdalen Islands line.....			4,631 89	4,631 89
Cable ship <i>Tyrian</i>			46,623 21	46,623 21
Generally, Gulf and Maritime Provinces.....			14,303 78	14,303 78
<i>Ontario.</i>				
Pelée Island.....			118 75	118 75
<i>Saskatchewan and Alberta.</i>				
Qu'Appelle-Edmonton-Atabasca.....	18,714 79		31,977 21	50,692 00
<i>British Columbia and Yukon.</i>				
Alberni-Cape Beale.....			2,056 90	2,056 90
Alberni-Clayoquot.....			4,494 61	4,494 61
Ashcroft-Dawson.....	2,314 37	20,431 38	215 010 05	237,788 80
Golden-Windermere.....	2,077 97		3,932 51	6,009 58
Kamloops-Okanagan.....	7,175 90		11,222 78	18,398 68
Nanaimo-Comox.....	6,390 97		7,085 71	13,476 68
Nanaimo-Gabriola Island.....	2,657 00			2,657 00
North Thompson Valley line—Kamloops to Fennell....	4,587 08			4,587 08
Vancouver-Salt-Spring-Pender Island line.....	4,835 00		1,242 45	6,117 45
Victoria-Cape Beale.....	5,926 39		10,697 55	16,623 94
Victoria-William's Head.....	1,002 35			1,002 35
Generally, B. C.....			4,291 31	4,291 31
Telegraph service, generally.....			4,876 41	4,876 41
Totals, Telegraphs.....	69,477 80	20,573 82	445,428 50	535,480 12

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Construction and Im- provements.	Repairs.	Staff and Main- tenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
MISCELLANEOUS.				
Cement testing laboratory.....	4,231 22			4,231 22
Surveys and inspections—				
Georgian Bay survey to Montreal.....			41,274 50	41,274 50
Maritime provinces.....			10,780 03	
Quebec.....			29,837 85	
Ontario.....			15,519 37	
Manitoba.....			1,265 28	
Saskatchewan and Alberta.....			3,804 99	
British Columbia.....			3,956 22	
Generally.....			2,926 32	68,090 07
Secretary's and Accountant's branches.....			31,855 31	31,855 31
Chief Architect's branch.....			24,906 02	24,906 02
Chief Engineer's branch.....			160,817 84	160,817 84
Telegraph service branch.....			6,733 05	6,733 05
Public Works agency, B.C.....			1,327 07	1,327 07
Technical and other books of reference.....			424 11	424 11
Deep waterways commission.....			15,811 97	15,811 97
Brantford monument, telephone.....	5,000 00			5,000 00
Monuments to memory of late Sir L. H. Lafontaine and late Hon. Robt. Baldwin.....	3 75			3 75
Pail to heirs of late Angus McPherson.....			1,000 00	1,000 00
Compensation to Mr. Sydney J. Dale.....			500 09	500 00
Compassionate allowance to Belivar Robillard.....			500 00	500 00
Gratuity to widow of late John Pasco.....			244 00	244 00
" " John Harvey.....			130 00	130 00
" Miss Jessie Murray, daughter of the late James Murray.....			106 75	106 75
" the widow of the late Serephin Champagne.....			117 00	117 00
" the mother of the late Thomas Hogan.....			104 00	104 00
" the widow of the late Jos. Blanchard.....			104 00	104 00
" " J. W. Jordan.....			200 00	200 00
" mother of the late Angus O'Neill.....			122 00	122 00
" the widow of the late Fred Gelinac.....			358 33	358 33
" the estate of the late James Sinclair.....			125 00	125 00
Totals, Miscellaneous.....	9,234 97		354,851 02	364,085 99

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

Name of Work.	Dredging.	Construction and Im- provements.	Repairs and Furniture.	Staff and Main- tenance.	Total.
RECAPITULATION.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Totals, Public Buildings—					
Nova Scotia.....		173,985 13	7,053 71	44,659 61	225,698 45
Prince Edward Island.....		7,198 15	4,139 97	7,614 28	18,952 40
New Brunswick.....		49,695 60	11,058 87	39,490 73	100,245 20
Quebec.....		1,208,018 87	130,874 96	162,226 02	1,501,119 85
Ontario.....		1,646,583 31	235,284 35	59,819 68	2,451,687 34
Manitoba.....		459,497 03	4,554 40	51,918 80	515,970 23
Saskatchewan and Alberta.....		357,519 13	8,175 44	54,466 70	420,161 27
British Columbia.....		412,821 56	11,988 04	41,745 52	466,555 12
Yukon Territory.....		21,135 77		82 497 37	106,633 14
Public Buildings generally.....				38,263 70	38,263 70
Totals, Harbours, Rivers, &c.—					
Nova Scotia.....	568,116 61	382,547 10	65,725 54	12,796 24	1,029,185 49
Prince Edward Island.....	32,422 25	103,097 68	15,319 16	902 62	151,741 71
New Brunswick.....	442,434 61	310,531 36	37,584 65	10,382 54	800,933 16
Quebec.....	608,856 62	885,772 12	114,925 35	46,871 67	1,656,425 76
Ontario.....	1,681,768 61	789,921 22	40,477 79	40,071 09	2,552,238 71
Manitoba.....	37,080 49	309,350 50	135 90	4,992 38	351,559 27
Saskatchewan and Alberta.....	619 54	16,698 36		3,029 79	20,347 69
British Columbia.....	221,898 80	76,752 32	4,218 85	16,156 04	319,556 01
Yukon Territory.....		7,824 66			7,824 66
Harbours, rivers, &c., generally.....	2,788 08			9,305 39	12,093 47
Totals, dredges and dredging plant.....		779,805 47	171,982 35		951,787 82
“ slides and booms.....		31,430 66	13,486 12	92,169 79	137,086 57
“ roads and bridges.....		30,569 60	9,410 92	9,125 74	49,106 26
“ telegraph lines.....		9,477 80	20,573 82	445,428 50	535,480 12
“ Miscellaneous.....		9,234 97		354,851 02	364,085 99
Grand totals of expenditure....	3,595,985 61	8,142,468 37	907,000 19	2,139,285 22	14,784,739 39

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT B.—Showing the Cost of the following Services for each Public Building, &c. (the total for each Province being carried into statement 'A').

Name of Building.	Rents.	Salaries, of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Nova Scotia.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Amherst post office, &c.		471 86	713 12	246 78	16 00	1,447 76
Annapolis post office, &c.		457 09	209 22	147 00	30 00	843 31
Antigonish post office, &c.		439 61	238 05	312 00	30 00	1,019 66
Arlivat post office, &c.		1 8 85	186 25	239 78		594 88
Baddeck post office, &c.		270 79	207 00	44 75		522 54
Bridgewater post office.		109 73	186 75	175 75		473 23
Dartmouth public building.		272 79	147 68	145 88	30 00	596 35
Canso post office.		543 81	321 00	19 83		935 24
Digby post office, &c.		467 48	296 25	412 62	64 00	1,240 35
Guysboro' post office, &c.		124 05	153 32	96 38		373 75
Halifax Asst. Receiver General's Office.	1,500 00		79 35	54 57	10 00	1,643 92
" Appraiser's Office (Exam. W.H.)	1,250 00	572 55	10 90	47 09	51 52	1,932 06
" cattle quarantine.	120 00					120 00
" custom house (new).		3,581 64	1,219 04	1,779 46	1,030 48	7,610 62
" Dominion building (post office).		2,395 37	81 97	52 87	1,250 00	3,780 21
" drill shed.		1,300 00				1,300 00
" immigrant shed.		715 00	811 43	884 60	706 67	3,147 70
" immigration detention building (Trachoma).		2 15	662 53	182 66	480 00	1,327 34
Inverness post office, &c.		422 76	42 65	53 37	31 88	550 66
Kentville post office, &c.		447 49	255 62	2 0 00	50 00	993 11
Liverpool post office, &c.		448 70	224 36	126 17	18 00	817 23
Lunenburg post office, &c.		342 55	210 51	253 95	59 00	889 00
New Glasgow post office, &c.		479 07	423 29	595 87	100 00	1,599 23
North Sydney post office, &c.		443 44	256 60	602 89	16 00	1,318 93
" engineer's office.	30 00					30 00
Pictou custom house.		4 96	411 93			416 89
" post office.		636 01	422 23	9 30		1,067 59
Springhill post office, &c.		528 43	226 00	401 00	30 00	1,185 83
Sydney post office, &c.		583 78	238 13	935 38	58 00	1,815 29
Sydney Mines post office, &c.		450 54	220 50	84 26	30 00	1,185 30
Truro post office, &c.		4 9 29	408 06	387 5	30 00	1,274 91
Windsor post office, &c.		433 29	292 74	202 00		928 03
Yarmouth post office, &c.		433 29	97 00	916 40	72 00	1,518 69
Total for Nova Scotia.	2,900 00	18,016 42	9,284 07	10,105 57	4,193 55	44,499 61
<i>Prince Edward Island.</i>						
Charlottetown Dominion building.		2,977 08	804 94	1,399 17	225 00	5,406 19
" engineer's office.	172 00					172 00
Montague post office, &c.		193 85	166 06	73 60		433 51
Souris post office, &c.		400 86	163 95	47 37		612 18
Summerside post office, &c.		447 94	374 57	144 79	23 10	990 40
Total for Prince Edward Island.	172 00	4,019 73	1,509 52	1,664 93	248 10	7,614 28
<i>New Brunswick.</i>						
Bathurst post office, &c.		492 01	586 12	606 13		1,684 23
Campbellton post office, &c.		443 29	298 25	197 30	32 25	971 09
Carleton, St. John West, post office, &c.		274 69	50 03	5 51		330 23
Chatham post office, &c.		333 61	341 12	430 84	14 50	1,120 07
" engineer's office.	40 00					40 00
Dalhousie post office, &c.		439 40	239 05	40 5	20 35	739 31
Fredericton post office, &c.		507 57	297 29	1,199 59	51 00	2,055 45
Grand Falls post office.	150 00					150 00
Marysville post office, &c.		162 50	187 02	23 00		372 52
Moncton post office, &c.		395 80	354 41	630 51	100 50	1,581 22
Newcastle post office, &c.		462 91	360 15	335 40	35 00	1,193 46
Richibucto post office, &c.		433 29	255 44	2 2 00		930 77
St. John custom house.	52 00	2,389 00	1,778 23	592 08	253 70	5,045 06
" cattle quarantine.		394 00			722 56	1,116 56

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies, for Engineers.	Heating.	Lighting.	Water.	Total.
<i>New Brunswick—Concluded.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
St. John detention hospital.....	2,090 61	150 00	231 23	79 32	17 23	2,568 39
" immigrant building.....	2,631 65	1,824 00	1,418 34	567 47	61 37	6,502 83
" post office.....		2,748 92	1,037 00	3,382 11	166 35	7,334 38
" savings bank.....		6 30	290 68	97 96	4 38	399 32
Tracadie Lazaretto.....		533 07	1,249 72			1,782 79
St. Stephen post office, &c.....		550 47	200 50	334 20	48 00	1,133 17
Sussex post office, &c.....		329 25	398 20	120 81	25 00	873 26
Woodstock post office, &c.....		481 29	280 97	274 68	34 00	1,070 94
" drill hall.....		450 00			25 00	475 00
Total for New Brunswick..	4,964 26	13,901 37	9,853 80	9,160 11	1,611 19	39,490 73
<i>Quebec.</i>						
Acton Vale post office.....		461 57	32 25	275 58	24 00	793 40
Aylmer post office.....		124 56	205 00	201 74	24 75	556 05
Berthierville post office.....		6 52	206 15	87 47	30 25	330 39
Buckingham post office.....		133 80	216 45	128 70	37 20	516 15
Chicoutimi post office, &c.....	200 00	532 96	345 00	366 87	310 00	1,754 83
Coaticook post office, &c.....		467 79	291 00	321 90	50 00	1,130 69
Drummondville custom house.....	140 00					140 00
" post office.....		463 92	195 50	194 20	22 00	875 12
Dundee custom house.....	12 50		80 00			92 50
Fraserville post office, &c.....		510 01	475 00	82 64	150 00	1,217 68
Graham post office, &c.....		336 35	221 10	156 55	150 00	864 00
Hochelaga post office.....		216 58	182 15	221 30	10 67	633 70
Iberville post office, &c.....		554 70	92 00	27 17		673 87
Hull post office.....		162 50	218 00	559 85	244 65	1,185 00
Isle Verte engineer's office.....	84 00					84 00
Joliette post office.....		443 28	312 79	126 00	108 00	990 07
Lachine post office.....		125 87	167 22	184 43	14 76	492 28
Lachine post office.....			240 00			240 00
Laprairie post office.....		168 72	166 20	31 86	45 00	411 78
L'Assomption post office.....		276 10	251 00	199 69	50 00	776 79
Lévis post office, &c.....		507 21	426 28	535 41	20 00	1,488 93
Longueuil post office.....		348 60	166 06	145 76	39 50	699 92
Montmagny post office.....	134 00	440 89	248 41	89 66	50 00	962 96
Montreal Civil Service Exam. office.....	100 00					100 00
" custom house.....	52 50	6,997 84	1,465 81	1,895 37	350 23	10,761 75
" Dominion public buildings.....	350 15	1,856 30			11 06	2,217 51
" drill hall.....		950 00				950 00
" engineer's office.....	1,558 41			16 76	49 00	1,634 17
" examining warehouse.....		12,189 22	1,312 33	3,203 51	703 73	17,463 79
" immigration office.....	2,030 90		513 74	273 05	434 19	3,251 88
" Inland Revenue office.....		1,228 05	297 00	239 86	99 97	1,864 88
" post office (main).....	397 00	20,755 78	1,485 23	17,155 49	865 30	40,658 80
" Station A (Wellington St.).....			30 50			30 50
" Station B (St. Catherine St.).....		1,103 73	272 12	903 91	231 83	2,511 59
" Station B temporary quarters.....	550 00	160 42	3 60	85 48		799 50
" other rented branches, sorting rooms, &c.....	5,393 50	630 35	210 79	1,160 23	167 81	7,592 68
Nicolet post office.....		592 53	229 00	10 20		831 73
Nominiguinge immigrant building.....		383 00	147 25	18 99		539 24
Peribonka immigrant building.....		325 00	77 50	3 26		405 76
Quebec Citadel buildings.....	17 00	594 70	786 25	217 54		1,615 49
" culler's office.....		592 70	466 05			1,058 75
" custom house.....		698 98	1,212 39	263 55	800 00	2,974 92
" engineer's office.....	246 85	121 50				371 35
" examining warehouse.....		1,797 29	1,694 46	74 50	450 00	4,016 25
" immigration building.....			1,100 94	1,358 40		2,459 34
" observatory.....				83 07	50 00	133 07
" post office.....	141 00	2,973 62	974 24	1,034 43	750 00	5,873 29
Queen's wharf building. (Mar- ine, signal service, cullers, gas inspection, weights and measures).....		15 00				1,752 10
" Trachoma hospital.....	99 00		1,648 35	302 08	1,569 74	3,619 17
" St. Sauveur post office.....	421 50	130 00				551 50
" St. Roch post office.....			56 95	31 10		88 05
Richmond post office, &c.....		571 05	441 99	286 38	25 00	1,324 42
Rigaud arsenal.....		12 25				12 25
Rimouski post office, &c.....	15 00	190 37	328 57	127 90	75 00	736 84
Roberval immigration shed.....		325 00	314 88	259 53	16 00	915 41
Sherbrooke post office, &c.....		712 50	508 51	1,081 35	50 00	2,352 36
Sorel post office, &c.....		622 53	445 29	791 54	252 44	2,111 80

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Quebec—Continued.</i>						
St. Eustache post office, &c.....	288 00					288 00
St. Henri post office, &c.....			221 49	122 80	29 28	373 57
St. Hyacinthe post office, &c.....		667 54	173 42	458 64	150 00	1,449 60
" Inland revenue.....		458 74	219 06	36 24	100 00	814 04
" drill hall.....		450 00				450 00
St. Jérôme post office, &c.....		437 01	325 98	134 48	27 00	944 47
St. John's post office, &c.....		392 43		312 50	70 00	774 93
" engineer's office.....	40 00					40 00
St. Louis du Mile End post office.....		669 01	208 56	355 87	14 22	1,247 69
Ste. Anne de Bellevue post office.....	100 00		40 00	30 00		100 00
St. Gabriel de Brandon post office.....	352 00					422 00
Terrebonne post office, &c.....		330 92	143 00	86 72		560 64
Thetford Mines post office, &c.....		185 20	344 79	273 55	16 25	819 79
Three Rivers drill hall.....		462 28	136 00	1 75		600 03
" custom house.....	664 61	403 91	199 10	808 74		2,076 36
" post office.....	94 25	884 41	5 16	789 20		2,317 02
Valleyfield post office, &c.....		475 92	375 68	96 37	90 00	1,037 97
Victoriaville post office, &c.....	1 00	159 60	120 61	206 86	50 00	537 50
West Farnham post office.....		319 21	104 20	50 01	20 00	502 45
Total for Quebec.....	13,551 17	69,130 91	24,908 38	38,620 52	9,648 83	155,859 81
<i>Ontario.</i>						
Alexandria post office, &c.....		539 82	305 12	201 75		1,046 69
Almonte post office, &c.....		452 64	202 62	60 92	60 75	776 93
Amherstburg post office, &c.....		447 69	207 00	171 10	26 25	852 04
Arnprior post office, &c.....		498 01	339 05	409 32	36 07	1,352 48
Barrie post office, &c.....		463 29	283 00	303 18	50 00	1,099 47
Belleville post office, &c.....		769 87	530 11	2,426 33	83 25	3,809 56
Berlin post office, &c.....		470 21	291 95	317 82	19 03	1,099 01
Bowmanville post office, &c.....		458 49	176 85	116 00	20 00	771 34
Brampton post office, &c.....		450 39	219 50	165 28	33 00	868 17
Brantford post office, &c.....		691 43	716 49	341 29	38 00	1,787 21
Bridgeburg post office, &c.....		340 55	187 50	60 29	30 00	618 34
Brookville post office, &c.....		626 59	437 50	570 25	170 00	1,804 34
Carleton Place post office, &c.....		327 10	192 25	102 52		621 87
Cayuga post office, &c.....		56 68	75 65	8 50		140 83
Chatham drill hall.....		450 00				450 00
" post office, &c.....		642 12	270 92	133 79	21 25	1,058 08
Clinton post office, &c.....		225 98	252 27	201 06	2 00	681 31
Cobourg post office, &c.....		481 04	248 25	673 55	34 12	1,436 96
Cornwall post office, &c.....		537 76	298 60	648 16	37 50	1,522 02
Deseronto post office, &c.....		522 79	280 00	369 97	39 00	1,211 76
Dundas post office.....	625 00	54 08	45 05	15 75		789 88
Fort William post office.....		536 60	490 25	347 79	83 22	1,457 86
" engineer's office.....	379 00					379 00
Galt post office, &c.....		469 71	303 52	75 05	34 28	882 56
Gananoque custom house.....			4 99	207 58	14 72	227 29
" post office.....		1 50	266 08	282 00	34 37	583 95
Goderich post office, &c.....		447 29	2 0 92	140 99	45 00	594 20
Guelph post office, &c.....		619 32	391 00	674 32	39 60	1,724 24
Hamilton customs exam. office.....		700 00		132 95	40 60	873 55
" inland revenue.....		60 00		18 16	23 05	101 81
" drill shed.....		55 62	124 57			180 19
Hamilton post office, &c.....		2,508 95	1,173 33	2,127 87	1,024 10	6,834 25
Hawkesbury post office, &c.....		464 60	80 81	138 42	22 25	706 08
Ingersoll post office, &c.....		497 49	316 11	432 82	19 76	1,266 18
Kenora post office, &c.....		452 39	287 35	216 24	74 68	1,030 66
Kingston exam. office.....			43 50			43 50
" custom house.....		253 25	463 59	104 70	59 25	880 79
" drill hall.....		650 00				650 00
" inland revenue office.....	2,202 50	608 89	537 10	34 30	47 03	3,429 82
" military college.....		3,745 50				3,745 50
" post office.....	171 38	725 88	426 90	419 55	59 50	1,803 21
Lindsay post office, &c.....		442 95	259 50	125 55	22 50	850 50
London custom house.....		1,214 29	905 23	649 46	122 60	2,891 58
" drill hall.....		778 00				778 00
" engineer's office.....	707 00					707 00
" post office.....		1,570 27	695 35	1,813 01	70 00	4,148 63
L'Orignal post office.....	31 25					31 25
North Bay post office.....	40 00	629 33	416 00	275 40	22 50	1,383 23
Napanee post office, &c.....		549 57	262 02	214 60	79 35	1,105 54
Niagara Falls post office, &c.....		467 05	286 48	325 00	24 38	1,102 95

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies, for Engineers.	Heating.	Lighting.	Water.	Total.
Ontario—Concluded.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Orangeville post office, &c.....		442 19	298 51	896 45	20 00	1,627 15
Orillia post office, &c.....		418 03	255 25	104 95	16 25	794 48
Oshawa post office, &c.....		462 57	216 20	213 77	13 11	935 65
Owen Sound post office, &c.....			312 75			312 75
Ottawa archives building.....		1,250 00	728 94	614 50		2,603 44
" astronomical observatory.....		1,571 55	701 34	830 66		3,103 55
" bacteriological laboratory.....			77 50	329 00		406 50
" experimental farm.....			1,841 90	201 56		2,043 46
" Geological museum.....		850 00	907 08	1,178 88		2,935 96
" Major's hill park green house.....		300 00	336 55			636 55
" National art gallery & fisheries museum.....		120 00	114 30	404 00		638 30
" parliamentary and departmental buildings.....		35,169 16	57,002 06	26,729 03		119,900 25
" post office.....		3,120 00	1,433 44	1,733 50		6,286 94
" printing bureau.....		7,281 41	6,810 99	5,801 00		19,893 40
" Royal mint.....			244 20	1,272 86		1,517 06
" supreme court.....		1,320 00	781 38	968 50		3,069 88
" workshops (D.P.W.), &c.....		1,020 00	1,184 75	641 50		2,846 25
" sundry rented buildings.....	130,110 22	7,655 00	8,918 73	10,757 32		157,441 27
Paris post office, &c.....		448 29	140 13	72 58	61 60	722 60
Pembroke post office, &c.....		442 85	251 72	202 70	36 00	933 27
Peterboro' custom house.....		334 05	256 23	110 50	50 00	750 78
" post office.....		499 54	277 43	324 40	75 00	1,176 37
Petrolia post office, &c.....		459 00	214 41	263 87	39 25	976 53
Pictou post office, &c.....		466 71	234 75	189 02	13 50	903 98
Port Arthur post office, &c.....		455 19	418 00	200 15	82 98	1,156 32
" immigrant building.....			19 25		20 75	40 00
" engineer's office.....	312 00			19 00		331 00
Port Colborne post office.....		390 06	31 25	145 40	15 00	581 71
" engineer's office.....	146 25					146 25
Port Burwell engineer's office.....	10 00					10 00
Port Hope post office, &c.....		467 81	303 25	548 65	8 52	1,328 23
Prescott custom house.....				4 73	30 00	31 73
" post office.....		520 79	409 95	111 96	60 00	1,102 70
Sandwich post office, &c.....		338 97	75 50	113 39	11 55	539 41
Sarnia post office, &c.....		594 38	336 35	209 51	44 00	1,184 24
Sault Ste. Marie post office, &c.....		719 69	348 90	515 95	58 19	1,642 73
Smith's Falls post office, &c.....		444 64	180 90	175 47	66 75	867 76
Stratford armoury.....		450 00				450 00
" post office, &c.....		725 66	3 9 35	227 62	29 00	1,351 63
Strathroy post office, &c.....		468 69	219 10	159 57	19 80	897 16
St. Catharines drill hall.....		570 00				570 00
" post office, &c.....		526 39	241 10	518 42	43 32	1,329 23
St. Mary's post office, &c.....		380 40	222 70	193 45	21 02	817 57
St. Thomas post office, &c.....		464 54	250 00	256 46	22 49	993 49
Toronto Assistant-Receiver General's, & inland revenue offices.....		1,122 50	362 05	204 06	26 55	1,715 16
" civil service.....	35 00					35 00
" custom house.....		4,360 02	781 74	713 99	74 77	5,930 52
" custom post office.....	1,500 00					1,500 00
" drill shed.....		2,353 02	32 50			2,385 52
" engineer's office.....	777 00					777 00
" examining warehouse.....		5,164 99	1,280 10	355 25	76 17	6,876 51
" immigrant sheds.....	833 33					833 33
" steamboat inspectors office.....	900 00					900 00
" post office.....	30 00	8,724 44	1,297 21	5,247 27	440 32	15,739 24
" station H.....	525 00					525 00
" " A.....	1,489 95	1,753 75				3,243 70
" " B.....		5 75		2,289 12		2,294 87
" " C.....	1,000 00	141 25		323 33		1,464 58
" " D.....	15 00	599 60	455 26	480 63	29 32	1,579 31
" " E.....		575 71	203 86	496 33	10 04	1,285 94
" " F.....	843 30	135 60		182 09		1,160 99
" junction post office, &c.....		486 29		418 15	45 00	949 44
" pneumatic tubes.....	220 00					220 00
Trenton post office.....		487 54	247 00	338 42	75 75	1,148 71
Walkerton post office, &c.....		439 59	374 78	259 45	22 50	1,096 32
Windsor drill hall.....		450 00				450 00
" post office, &c.....		1,053 55	456 75	801 69	96 00	2,410 99
Wingham post office.....		231 50	305 62	132 27	20 05	689 44
Woodstock armoury.....		400 00				400 00
" post office, &c.....		588 12	369 83	472 03	35 20	1,465 18
Total for Ontario.....	112,903 15	129,185 83	106,677 12	86,159 95	4,473 31	469,399 39

9-10 EDWARD VII., A. 1910

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Manitoba.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brandon experimental farm.....			461 11	76 09		537 20
" immigrant building.....			493 52	130 91	57 01	681 44
" post office, &c.....		1,072 27	871 21	1,322 36	44 09	3,309 93
Dauphin immigrant station.....			58 13			58 13
lands office, Indian department	1,005 00		170 00			1,175 00
East Selkirk Immigrant shed.....	10 00					10 00
" post office.....		39 03	285 29			324 32
Lockport engineer's office.....	54 00					54 00
Minnedosa Dominion lands.....	60 00					60 00
Neepawa post office, &c.....			540 00			540 00
Portage la Prairie post office, &c.....		589 85	614 24	266 81	18 10	1,489 00
St. Boniface post office.....		346 65	21 00		20 68	388 33
Virden immigration building.....	250 00		16 50			266 50
Winnipeg Custom house.....		915 00	589 68	195 70	107 06	1,807 44
" express parcel office.....	1,200 00					1,200 00
" Dominion lands office.....		108 00	108 50	4 35	54 60	275 45
" Dominion public buildings.....	81 00		58 00	9 00		324 65
" engineer's office.....	820 70	5 50				826 20
" examining warehouse.....			372 66	133 35	24 66	530 67
" immigration building.....			3,907 21	1,993 60	867 80	6,768 61
" weights and measures office.....	600 00					600 00
" post office (old).....	4 85	6,997 84	3,096 85	8,668 38	723 77	19,491 69
" post office (new).....		4,074 10	2,807 80	1 50	413 16	7,296 56
" post office, sorting room, C.P.						
Ry station.....	1,025 00					1,025 00
" Postal station.....	1,295 00	617 75	190 73	6 80	10 50	2,120 78
" railway commissioner's office	490 00			9 05		499 05
Total for Manitoba	6,895 55	14,765 99	14,662 43	12,817 90	2,341 43	51,483 30
<i>Northwest Provinces.</i>						
Battleford Dominion lands office.....	800 00		327 00			1,127 00
" immigration building.....	590 00		258 54			848 54
Calgary custom house.....	2,400 00	10 85		100 76		2,511 61
" engineer's office.....	725 00					725 00
" immigrant building.....	30 00		213 53	65 75	40 00	349 28
" post office, &c.....	210 00	2,248 78	920 11	7,588 35	300 00	11,267 24
Davidson immigrant building.....			4 75			4 75
Irvine immigrant hall.....	25 00					25 00
Edmonton Dominion lands and registry						
office.....		656 20	198 44	308 00		1,163 24
" immigrant shed.....			417 92	212 51	303 50	963 93
" post office.....	4,102 50	917 45	234 94	1,393 81	23 43	6,702 13
Estevan Dominion lands office.....	520 00					520 00
Humboldt Dominion lands office.....	720 00		132 50	57 35		909 85
Indian Head experimental farm.....			245 21	141 76		386 97
" forestry station.....	150 00		431 60			581 60
Lacombe experimental farm.....			162 17	90 74		252 91
Lethbridge court house and custom house			123 20	163 77	72 50	359 47
" immigration building.....			103 95	123 55	72 50	303 00
" experimental farm.....			132 33	5 87		138 20
" post office.....		601 85	38 50	147 55	25 00	812 90
Medicine Hat court house.....		1 75		4 45		6 20
" post office, &c.....		191 38	112 89			304 27
Macleod custom house.....			217 01	76 50	29 45	322 96
" immigration office.....	150 00					150 00
North Battleford immigrant building.....	200 00					200 00
Prince Albert Dominion lands and registry						
office.....		7 55		134 95		142 50
" immigrant shed.....	1 00		187 50	34 68		223 18
" post office.....		1,321 25	1,224 59	1,018 59	132 48	3,699 91
Red Deer Dominion lands office.....	720 44					720 44
Regina clerk of works office.....	378 00		612 40	480 55	60 00	2,485 35
" Dominion lands and registry office		1,323 40	123 75	47 20	31 70	202 65
" immigrant building.....			1,067 94	844 85	35 00	2,878 94
" post office.....		931 15	5 00			936 15
Rosthern immigrant building.....						5 00
Saskatoon post office.....	1,120 00	272 53	433 82			1,826 35
Strathcona immigrant shed.....	216 00		288 80		14 40	519 20
Saskatoon immigrant shed.....			1,260 75			1,260 75
Vermilion immigrant building.....	352 00		103 75			455 75
Vegreville immigrant building.....	240 00		20 65			260 65
Moosjaw post office.....		699 65	1,282 73	970 24	56 45	3,009 07
" immigrant building.....			112 00			112 00

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

Name of Building.	Rents.	Salaries of and Supplies. for Engineers.	Heating.	Lighting.	Water.	Total.
<i>Northwest Provinces—Concluded.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Moosejaw Dominion lands office.....	1,950 00					1,950 00
Lloydminster immigrant building.....			429 91	31 15	22 50	483 56
Moosejaw inland revenue.....	450 00					450 00
Yorkton Dominion lands office.....	975 00	15 40	31 50	20 30		1,042 20
" immigrant building.....			216 85			216 85
Sedgwick immigrant building.....	210 00		22 00			232 00
Settler immigrant building.....	505 00		30 00			535 00
Swift Current immigrant building.....			110 65			110 65
Total for N.W.T.	17,019 50	9,952 63	11,839 78	14,105 83	1,218 91	54,136 65
<i>British Columbia.</i>						
Atlin post office.....		162 50	85 00			247 50
Esquimalt custom house.....			32 00			32 00
Agassiz experimental farm.....			91 60			91 60
Kamloops post office.....		679 70	311 00	523 58	12 00	1,556 88
Coldwood telephone repair office.....	60 00					60 00
Nanaimo post office, &c.....		760 00	178 00	412 25	27 00	1,377 25
Nelson post office, &c.....		687 75	548 20	724 95	54 00	2,014 90
New Westminster Indian and Fisheries departments.....		681 05	239 00	25 66	23 37	969 08
" post office.....		772 32	497 50	972 34	56 74	2,298 90
Roseland post office, &c.....		681 60	235 28	910 80	97 06	1,924 74
Vancouver examining warehouse.....	3,744 00		135 21	706 27		4,585 53
" post office.....	786 00	2,405 02	601 95	2,283 00	87 17	6,223 14
" steamboat inspection office.....	300 00					300 00
" Chinese isolation hospital.....	2,916 55		794 68	1,086 30	297 50	5,195 03
Victoria Marine and Indian office (old custom house).....		802 50	280 40	108 60	14 00	1,205 50
" post office.....		3,839 50	1,200 87	1,538 15	41 05	6,619 57
" old post office.....		82 65	14 00		53 55	150 20
" hydro-service office.....	84 00		1 90	27 55		113 45
" immigrant building.....			3 70			3 70
William's Head quarantine station.....			5,778 40			5,778 40
Total for British Columbia..	7,890 55	11,614 59	11,059 34	9,919 45	763 44	41,247 37
<i>Yukon.</i>						
Whitehorse post office, &c.....		2,000 00				2,000 00
Dawson, sundry buildings (not appor- tioned).....						80,497 37
Totals for Yukon (carried into statement A, page 14).....		2,000 00				82,497 37

9-10 EDWARD VII., A. 1910

PART II, STATEMENT C.—Showing the amounts loaned by government under the authority of special Acts of Parliament, and upon the security of debentures of the borrowing corporation. The works upon which these funds are expended are of a quasi-public nature, and the several advances have been made upon the recommendation of the Honourable the Minister of Public Works, and after inspection by the Chief Engineer.

To whom Loaned.	Parliamentary Authority.	Purpose.	Amount.
			\$
Harbour Commissioners of Quebec...	62-63 Vic., ch. 34, sec. 34..	Improvements to Princess Louise dock.....	87,254 91

PART III

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED MARCH 31, 1909

BY THE

CHIEF ARCHITECT

PUBLIC WORKS, CANADA,

CHIEF ARCHITECT'S OFFICE,

OTTAWA, August 2, 1909.

NAPOLÉON TESSIER, Esq., Secretary,
Department of Public Works.

SIR,—I am sending you herewith, annual report of works executed under this branch during the fiscal year ended March 31, 1909.

D. EWART,
Chief Architect.

PROVINCE OF NOVA SCOTIA.

AMHERST.

PUBLIC BUILDING.

Concrete footpaths with curb and gutter were laid along front and side of building, and the basement windows had repairs made to sills, frames, glass and screens.

Work done under supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

ANNAPOLIS.

PUBLIC BUILDING.

The masonry was pointed; the walls and ceilings were kalsomined; the interior woodwork was painted; the janitor's quarters had new hardwood floors laid, walls papered and ceilings kalsomined and woodwork painted and repaired; annex had roof woodwork repaired, iron work painted, interior plaster repaired and tinted, and oil cloth was supplied for one office.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

BRIDGEWATER.

PUBLIC BUILDING.

This building, which was described in my report of last year, is nearly completed, fitted up and has a hot water heating system installed.

GLACE BAY.

PUBLIC BUILDING.

This building, which was described in my report of last year, is still in progress of erection.

9-10 EDWARD VII., A. 1910

HALIFAX.

DOMINION BUILDING.

On 18th July, 1908, a contract was entered into for the execution of the various necessary works involved in altering this building to render it suitable for post office and Dominion savings bank purposes. These will include the removal of all the internal partitions, floors, stairs, plastering, &c., and the introduction of new fire-proof construction throughout the interior of the building. The partitions and the lining of the outer walls of basement, the vaults on basement, ground floor and first floor are to be brick; the partitions on the first and second floors are to be iron and plaster; the public lobby floors on ground floor and first floor are to be marble mosaic, those of the corridors and toilet rooms throughout are to be terrazzo, and, on the stairways and in the lobbies, there are to be marble dadoes. In the basement, the newspaper sorting room is to be floored in wood and the remaining rooms in cement concrete; the rooms on ground floor, first floor and second floor are to be floored in wood on cement concrete. The basement will contain the boiler room, a newspaper sorting room, a vault 13 feet by 12 feet, the men's W.C's., and space for storage; the ground floor will be entirely devoted to the post office; the first floor to the offices of the Post Office Inspector and his staff, the Dead Letter Office, and the Money Order and Dominion Savings Bank Offices, the W.C's, &c., and the third floor to the Customs parcel post, the Railway Mail Service, extra office room, the caretaker's quarters and W.C's.

Plans and specifications prepared by this department.

PICTOU.

POST OFFICE.

The front gable was repaired and painted; the water conductor from roof was continued to sewer and the plumbing and heating services were repaired.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SPRINGHILL.

PUBLIC BUILDING.

Repairs were made to wood and plaster; the walls and ceilings were tinted; the tower clock room and the stairway were sheeted and the woodwork of the building was painted.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SYDNEY.

POINT EDWARD QUARANTINE.

A large number of repairs and improvements were made to the station; new drains were laid and all the hospital buildings painted in and out. The steward's residence was repaired and painted and had the ceilings tinted.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SHELBURNE.

PUBLIC BUILDING.

This building, which was described in my last year's report, is still in progress of erection.

SESSIONAL PAPER No. 19

TRURO.

ARMOURY.

This building, which was described in my report of last year, is completed.

Plans and specifications prepared by this department.

Clerk of works, D. Henderson.

Contractor for construction of building, Frank Wilson.

Contractor for hot water heating, Frank Dexter Co.

PUBLIC BUILDING.

The main entrances were improved, the doors glazed and rearranged; the lobby doors were repaired and glazed; a post office box was built in vestibule, and sundry small repairs were made.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

WESTVILLE.

PUBLIC BUILDING.

This building, which was described in my report of last year, is completed, fitted up and furnished. A hot water heating system was installed.

PROVINCE OF NEW BRUNSWICK.

CAMPBELLTON.

PUBLIC BUILDING.

The concrete footpaths were repaired and in part renewed; new door locks supplied and the concrete floor in basement repaired.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

CHATHAM.

MIDDLE ISLAND QUARANTINE.

A boat landing butt was built and repairs to old one made as also a ladder and gangway.

At the hospital, a new bath room and W.C., with all necessary plumbing and fixtures was provided and a drain laid to river with terra-cotta pipe.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

PUBLIC BUILDING.

The lobby screen, fittings, drawers, boxes, &c., were improved and in part renewed; the woodwork was repaired; the waterclosets ventilated, and the front water conductor renewed.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

9-10 EDWARD VII., A. 1910

FREDERICTON.

PUBLIC BUILDING.

Concrete footpaths with curb and gutter were laid along front and side of lot; the front entrance was improved by a new door, &c.; a rear porch was built and improvements made to rear entrance, and sundry ordinary repairs were made to woodwork, paint, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

ST. JOHN.

CUSTOM HOUSE.

An inter-communicating telephone system of twenty-five telephones was installed; a new signal mast with yards, fittings, &c., was rebuilt to replace that on south tower which was destroyed by a storm; a partition was built in basement of north wing and an additional room formed; 400 feet of 2½-inch linen hose were supplied; filing cabinets were built and shelving and fittings for the vault; some additional furniture and linoleum were supplied; a considerable amount of painting, varnishing and kalsomining was done, and repairs were effected to roof, plastering, carpentry, plumbing, heating, hoist, machinery, furniture, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

MILITARY STORES BUILDING (ADDITION).

This building, which was described in my report of last year, has been completed and furnished with a hot water heating apparatus.

Plans and specification prepared by this department.

Clerk of works, W. J. Fitzgerald.

Contractor for construction of building, Flood & Bate.

Contractor for heating apparatus, Jeremiah Buckley.

POST OFFICE.

The offices, halls and the caretaker's apartments were cleaned, whitened, painted and varnished. There were supplied 250 feet of 2½-inch linen hose, two large sorting cabinets, sorting frames, tables, desks, &c., for letter carriers flat, blinds for caretaker's apartments, chair for accountant, new door springs, a cabinet for letter box keys, two trucks for railway mail delivery, one steel locker for mail packages, new packing and cable for hoist and chairs for the C. S. examining room. The north tower was pointed and repairs and renewals were made to stonework, woodwork, glazing, paint, plaster, pipes, wires, fixtures, heating boiler, &c.

At the Intercolonial Railway station a mail room was fitted with desk, tables, shelves, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, N.B.

ST. JOHN WEST.

POST OFFICE.

The caretaker's apartments were cleaned, tinted and painted. New stoves and pipes were supplied and repairs were made to water supply, plumbing, plaster, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, N.B.

SESSIONAL PAPER No. 19

ST. JOHN.

SAVINGS BANK.

Minor general repairs were effected, under the supervision of D. H. Waterbury, Superintendent Public Buildings, N.B.

IMMIGRATION BUILDING.

New furnace pipes, window screens and new firing tools were supplied, the chimney was pointed and repairs were made to W.C.'s, sinks, plumbing, ranges, furnace, roof, gutter, down pipes, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

DETENTION HOSPITAL.

Additional furniture was provided. Two new bathrooms were formed and fitted up, some changes were made in partitions, new floor was laid in kitchen and room adjoining, three windows were iron grated; fire escapes were provided; a new hot water boiler was installed; furniture, &c., was provided for matron; painting, tinting, varnishing and papering were effected, and general repairs done throughout.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

QUARANTINE STATION, PARTRIDGE ISLAND.

At doctor's residence, a new metal ceiling was hung in kitchen, the doors and windows were screened, the furnace smoke pipe was renewed and repairs were made to carpentry and plaster. At the hospital, two rooms were painted for the matron; at the detention buildings, hospital and disinfection house, repairs were made to range, furnace, water conductors, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

RICHIBUCTO.

PUBLIC BUILDING.

An artesian well was bored in basement, resulting in a better supply of water than before, and sundry repairs were made to plumbing.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SUSSEX.

PUBLIC BUILDING.

Additional heating surface was supplied and repairs made to lock boxes, woodwork and fittings.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

TRACADIE.

LAZARETTO.

A porch was built at rear entrance; a new hardwood floor was laid in basement passage; the alley was asphalted; the verandahs were repaired and some repairs and improvements were made to door, woodwork and plaster.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

9-10 EDWARD VII., A. 1910

PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

QUARANTINE STATION, WESTPORT.

An addition for kitchen and pantry was made to steward's residence.

GEORGETOWN.

PUBLIC BUILDING.

On October 20, 1908, a contract was entered into for the alteration of a building on a plot purchased, situated on the corner of Kent and Richmond streets. It is a two-story and attic brick building on a stone basement, with wooden floors, partitions, stairs and roof, measuring on plan, 62 feet by 69 feet.

Plans and specification for a hot water heating apparatus are prepared.

The basement is for heating apparatus; the ground floor for the post office and examining warehouse, and the first floor for the customs long room, postal store and lavatory.

Plans and specification prepared by this department.

Clerk of works, M. D. McPhee.

Contractor, B. D. Humphrey.

MONTAGUE.

PUBLIC BUILDING.

The front steps were removed and replaced by new and better ones; a balustrade was erected; some fencing was done; a wicket was placed in lobby screen; some additional heating surface was supplied and the woodwork improved.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SOURIS.

PUBLIC BUILDING.

The floor was trussed to enable it to properly support weight of large safe and some other improvements in flooring were made.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SUMMERSIDE.

PUBLIC BUILDING.

A plumbing system was put in, the soil pipe connected with the town sewer and the water supply with the town main.

Concrete sidewalks with curb and gutter were laid along front and side of property; the stone steps and stone piers were improved and the rear verandah repaired.

Work done, under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

SESSIONAL PAPER No. 19

PROVINCE OF QUEBEC.

COOKSHIRE.

PUBLIC BUILDING.

On October 3rd, 1908, a contract was entered into for the construction of this building on a plot of ground having a frontage of 100 feet on Main street by a depth of 125 feet.

There are to be two stories of brick on a stone-faced concrete basement, divided into a main portion 38 feet by 29 feet and an adjunct 21 feet by 23 feet in rear. The partitions, floors, stairs and roof are of wood excepting in the basement where the floor is of concrete and the partitions of brick.

The basement is divided into boiler room, fuel room and W.C.'s; the ground floor of the main portion is the post office and, of the adjunct, the examining warehouse, weights and measures and W.C.; the first floor of the main portion is the Customs and Inland Revenue offices, and that of the adjunct, quarters and bath room for caretaker.

Plans and specification prepared by this department.

Resident architect, J. W. Grégoire.

Contractors, Simoneau & Dion.

GROSSE ILE.

QUARANTINE STATION.

A new frame to the tanks at the western division was erected and painted; a filter was placed on the supply pipe of these tanks and inclosed in a wooden building, shingled and painted; the medical superintendent's residence had a new floor to verandah, blinds repaired and painted, new brick wall to dairy; laundry sheeted with wood inside and out and painted; a new coal bin made; at the assistant superintendent's residence a cellar was excavated, the house raised, a well excavated and covered, a door and frame put in; the electricians residence had the interior renovated, painted and papered; Rev. Riopel's residence had a well excavated; the carter's residence had a stable with hayloft, a hen house and a shed erected and painted, and 20 screens provided; the upstairs kitchen had two w.c.'s installed and inclosed; the boiler room was sheeted with T. & G. boards; the large hospital at the eastern division had the store refloored and outside blinds repaired; the ice house was renewed and painted outside; one stable was repaired and painted; the roofing of nine large sheds were coal tarred and the sides whitewashed, and twenty-five acres of fencing were repaired and coal tarred.

STEWARD'S HOUSE.

A building 32 feet by 31 feet 6 inches, with a kitchen 12 feet by 12 feet of wood, the inside plastered in selenite, was erected and painted.

LAUNDRY, EASTERN DIVISION.

An addition 18 feet by 24 feet of wood brick-veneered, roof covered in galvanized iron, floored with cement, lined with wood was built and fitted up partly as a coal bin, furnished with cupboard, work bench, &c.

All the foregoing works carried out under the supervision of Ph. Béland, clerk of works, Quebec.

JOLIETTE.

ARMOURY BUILDING.

On February 12, 1909, a contract was entered into for the construction of this building, on a plot situated on the south side of Park street opposite the public park,

9-10 EDWARD VII., A. 1910

having a frontage of 100 feet by a depth of 150 feet. Owing to a temporary difficulty concerning the conveyance of the site, the work was not commenced at the close of the fiscal year.

It is a two story brick building with stone dressings on a stone basement, having a frontage of 55 feet 8 inches by a depth of 46 feet 6 inches. The partitions, excepting a small number on ground and first floors, which are wood, are brick and the floors, stairs and roof, excepting the basement floor which is concrete, are of wood, the roof covered with tar and gravel. A part of the basement is unexcavated; the excavated portion contains a furnace room, a fuel room and a shooting alley room 27 feet by 15 feet. On the ground floor are two armouries, one regimental C.O. room, two company C.O. rooms, one adjutant's room, one quartermaster's stores room, a lavatory, a vestibule and a hall. The first floor has a lecture room, an officers' mess room and a sergeants' mess room.

Plans and specifications prepared by this department.

Contractors, Simoneau and Dion.

LACHUTE.

PUBLIC BUILDING.

This building, which was described in a previous report, is completed, wired for electric light, furnished with a hot water heating system as also office fittings and furniture.

MAGOG.

PUBLIC BUILDING.

A contract for the construction of this building, which was described in my report of last year, was entered into on May 27, 1908, and the building is nearing completion. Hot water heating and electric lighting are being installed, as also the office fittings and furniture.

Plans and specification prepared by this department.

Clerk of works, A. J. Whitehead.

Contractor for construction of building, R. Cameron.

Contractor for wiring, P. E. Marchaud & Co.

Contractor for heating, Albert Beauchene.

MONTREAL.

POSTAL STATION 'D,' POINT ST. CHARLES.

A contract for the erection of this building on the north side of Centre street, Point St. Charles, with a frontage of 62 feet 6 inches by a depth of 84 feet 5 inches, was entered into on December 2, 1908. The front portion to a depth of 36 feet 7 inches has two stories and basement, and the remaining 47 feet 10 inches has one story and basement. The walls of the basement are stone and the remaining walls brick; the Centre street front is faced with stone and the windows on the flanks of the two-story portion have stone dressings. The front cornice is of stone but that on the flanks is sheet metal. The basement and ground floor partitions and vaults are of brick and the basement floor of concrete, but the remaining partitions and floors and the stairways and roofs are of fireproof construction, the roofs covered with tar and gravel. The basement is for heating apparatus, fuel rooms, storage, &c.; the ground floor is entirely devoted to post office purposes, and the first floor to living apartments.

Plans and specification prepared by this department.

Superintendent architect, Alfred Piché.

Contractors, Messrs. Morssen & Co.

SESSIONAL PAPER No. 19

GENERAL POST OFFICE, ADDITION.

This work, which was described in my last report, has been in steady progress since, and is expected to be completed early in the next fiscal year. Hot water heating and electric lighting are being installed.

GENERAL POST OFFICE, ST. JAMES STREET.

The sidewalks were renovated in concrete and cement; a mezzanine floor was constructed in basement.

Rubbers on the three swing doors and on stamping tables were renewed; alterations were made to lighting system and several additional lights put in.

The heating system and plumbing have undergone minor renewals and repairs.

Furniture provided, such as tables, pigeon-holes, desks and chairs. Roof fixed and several lengths of fall pipe renewed; all under the supervision of C. Desjardins, clerk of works, Montreal, P.Q.

ST. HENRI.

POST OFFICE.

One 'Emond' filter was installed; various repairs were effected to plumbing; two sections of furnace were renewed; new firegrates provided and fixed, and the roof covering was put in good condition.

Ceilings and walls in post office and caretaker's quarters were cleaned, repaired and kalsomined; walls previously papered were repapered; the woodwork, windows, doors, &c., cleaned and painted; the bath room was repaired, and a new enamelled cast-iron bath, with a combined cold and hot water tap complete.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

SAINT LOUIS DU MILE END.

POST OFFICE.

In order to enlarge letter carriers' office, alterations were effected to interior of building, such as taking down plastered partitions and changing position of glazed divisions and letter boxes.

All walls of post office and caretaker's quarters were cleaned, repaired and kalsomined. Roof, woodwork, &c., painted; rubber weather strips put on all openings to protect from cold.

A w.c. bowl was renewed; waste pipes which were stopped were put in good order; a new 'Emond' filter was installed; improvements to electric light system were effected and new lights added.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

POSTAL STATION 'B.'

An iron railing was erected around roof to prevent snow or ice from falling on skylight; new electric light fixtures were installed and several additional lights put in, and repairs and renewals were made to plumbing.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

POSTAL STATION "C."

The interior of building was cleaned; the walls and ceilings repaired and kalsomined; the woodwork cleaned and painted; a new installation of lamps, fixtures,

9-10 EDWARD VII., A. 1910

shades, &c., was fitted to electric light system, also repairs to gas lights; chimneys and chimney mantels, &c., were provided and fixed, and the plumbing was repaired.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

HOCHELAGA.

POST OFFICE.

Minor repairs were effected to the building; the heating and plumbing were repaired; a section of furnace was renewed; an electric light system installed and a new tap put in.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

EXAMINING WAREHOUSE.

The roof has undergone various repairs; the plumbing was maintained in good order; pipes damaged were renewed, and two radiators were installed.

Owing to an explosion in the port, windows and glass had to be repaired and renewed.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

INLAND REVENUE.

The roofing and fall pipes were kept in order, as well as the plumbing, one basin and three taps were renewed; the heating apparatus was maintained in order and two radiators replaced by new ones. Various repairs were effected to gas lights and there were renewals of pipes and gas fixtures.

EXPRESS BUILDING, D'YOUVILLE PLACE.

Various alterations were effected to the interior of this building, such as old plastered partitions taken down and done over with batten boarding; walls and ceilings sheathed; new hardwood counters and glazed partitions, wickets, &c., constructed. A large number of shelves and pigeon-holes were constructed and a new toilet room with cement walls and ceiling, also a hardwood floor, four W.C's, three urinals and a lavatory with all necessary conduit and waste pipes, taps, &c., complete.

All openings, doors and windows were repaired, as well as a number of broken lights reglazed; all interior openings and all woodwork were painted two coats; the hardwood counters were stained and varnished and the galvanized iron on roof repaired.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

CUSTOMS HOUSE.

After the explosion, which took place in the port, broken windows were repaired and new glass put in; alterations of long room were made, a new glazed division was fixed on large counter; the automatic parcel carriers had to undergo repairing; wire grilles were fixed for cashiers' offices, a new mezzanine room was constructed above long room, with hardwood floor and glazed inclosure and stairs; a small hoist for parcels and stationery was erected; a lavatory, tap, waste pipe, &c., were also installed; the counter in 'Landing' was made wider and a new glazed division fixed on it with brass grilles to wickets and the interior of this room was repaired and painted throughout; repairing was done in long room, record and other rooms, skylights, first and second floor, stairs, &c. All walls of the above named rooms were put in good repair and kalsomined. All interior openings and all painted woodwork were painted over and hardwood work and stairs re-varnished.

SESSIONAL PAPER No. 19

Repairs were also done to heating system and two new radiators added, plumbing was also overhauled, two broken basins replaced by new ones, drain in cellar cleaned out and repaired.

Roofing was made good and new glass put in skylight, also gutters made.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

PLESSISVILLE.

PUBLIC BUILDING.

On December 11, 1908, a contract was entered into for the construction of this building on a site having a frontage on St. Calixte street of 50 feet by a depth of 100 feet along St. Edouard street. The building has a frontage of 40 feet 4 inches on St. Calixte street by a depth of 50 feet 4 inches; it has two stories of brick, with stone dressings, on a stone basement and surmounted by a wooden mansard attic. Excepting in the basement, where the floor is concrete and the partitions brick, the floors, partitions, stairs and roof are of wood, the roof covered with metal. The basement contains furnace room, fuel room, examining warehouse and storage; on the ground floor are the post office, customs offices, inland revenue office and lavatory; on the first floor are living apartments, and in the attic is an armoury.

Plans and specification prepared by this department.

Clerk of works, Alfred Mathieu.

Contractors, Paquet & Godbout.

QUEBEC.

HIS EXCELLENCY'S QUARTERS, CITADEL.

All drains were opened up and all their connections with fixtures throughout house tested and made good; three new soil pipes were put in as well as three breathing pipes. The original brick and tile drain below supper room floor was removed and replaced by an 8-inch cast iron pipe trapped and connected with main drain on south side of quarters and all the drains along north side and that from prison building and all the surface gullies were properly connected with the 8-inch pipe. A 6-inch branch drain was laid under supper room and a 4-inch drain under basement floor.

There were two lead-lined sinks with all connections and supply pipes renewed; one new sink supplied, fitted up and connected and one sink changed in position. In addition to the closets and accommodation for servants mentioned in my report of last year, a new bath room and lavatory was fitted up in the first floor for the use of H.R.H. A hot water heater was installed in basement and hot water service extended to all the baths, basins and sinks throughout the building. A new porch was built at supper room entrance and another at main entrance, the latter having before it a canvas canopy on a frame and posts of iron pipe. The covering of latrine pit under supper room was removed and replaced by reinforced concrete, a new floor then built over all. A bower of cedar poles covered with canvas was built at entrance to garden; two gangways were built as means of access to the garage. A new harness room, a temporary carriage house and two large platforms for washing carriages and autos were built. New floors in mangers as well as extensive repairs were made in stables. In the house, seventy-two carpenter's rim locks were removed and replaced by mortice locks; five new sashes were put in to replace others; a stairway was taken down and rebuilt elsewhere; the beams and posts in supper room were eased; a part of basement was partitioned off to form wine cellar; seven new venetian blinds and frames were put in; the terrace platform was refloored; eight wardrobes were built; some wainscoting was done; plank borders and stone coping were put in garden, as also a brick in cement tank for water plants and 220 feet lineal

9-10 EDWARD VII., A. 1910

of boxing for plants on top of wall. Galvanized iron pipes with taps for watering plants was laid along area wall and a quantity of sodding was done in front of house. A large number of floors were repaired and a number renewed; the billiard room was divided into four temporary bedrooms; a temporary shelter for signal officer was built on roof of new addition; new duck curtains were provided for walls of tent room, and eighteen cornice boards and brackets for curtains were fitted in principal rooms. Electric bells were installed in all rooms on ground and first floors, and all rooms throughout had additional electric light wiring, new lights, &c.

Of cleaning and tinting there were 2,552 yards, of two and three-coat painting 3,875 yards, and of papering, 564 rolls. A large quantity of furniture was supplied, consisting of fancy and drawing room tables, writing tables, low boys, high boys, chests of drawers, bureaus, dressing tables, bedsteads, mattresses, mirrors, sofas, chairs, &c., together with carpets for eight principal rooms, new curtains for rooms of ground and first floor, loose covers for sofas and chairs, range, two refrigerators, a number of kitchen and garden utensils, crockery, glassware and napery. General and thorough repairs were made in carpentry, plastering, painting, cabinet work, &c., &c.

Work done under the superintendence of Wm. Hutcheson, Superintendent, Government House, Ottawa.

DRILL HALL, SCHOOL OF GUNNERY.

A contract for the construction of this building was entered into on November 26, 1908. It is situated in Diamond Ditch, with the long axis parallel to and 21 feet from the scarp wall, and measures 168 feet 4 inches in length by 86 feet in breadth, all of which excepting 16 feet of the length at end opposite the entrance, which is occupied by a gallery having two rooms and gallery under, is a drill hall. There is a main entrance in the middle of the end wall next Diamond Bastion and an entrance by an inclosed and covered passageway from the sally port. The walls are of stone, brick-lined, the floor of wood blocks on concrete, the partition walls brick and the gallery and roof wood, the latter supported on iron trusses.

Plans and specification prepared by this department.

Superintending architect, Emile Tanguay.

Contractors, Dumais and Lachance.

POST OFFICE.

Some new offices and a new toilet room were fitted up; the roof was painted and some furniture was supplied; all under the supervision of Ph. Béland, clerk of works, Quebec.

CUSTOM HOUSE.

A carpenter and cabinetmaker was employed to keep the building fittings and furniture in repair; some radiators and some gas lights were installed and some linoleum was supplied and laid. All under the supervision of Ph. Béland, clerk of works, Quebec.

EXAMINING WAREHOUSE.

Some electric bells were installed, and repairs were effected to boilers and foot-paths; under the supervision of Ph. Béland, clerk of works, Quebec.

IMMIGRATION BUILDING.

The roof of the shed for United States immigrants was covered with galvanized iron and the roofs, generally, repaired; a bath and w.c. were put in and hose and furniture supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

SESSIONAL PAPER No. 19

CULLERS' OFFICE.

Some plumbing was done, some furniture repaired and tools supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

IMMIGRATION HOSPITAL.

An ice-house was erected; stoves were repaired and hardware and furniture supplied. All under the supervision of Ph. Béland, clerk of works, Quebec.

QUEBEC EAST (ST. ROCHS).

POST OFFICE BUILDING.

On February 6, 1909, a contract was entered into for the construction of this building, situated at the intersection of St. Joseph and Dorchester streets, measuring on plan about 49 feet by 48 feet, of three stories and basement, the walls of brick, faced with cut stone on street fronts and with stone dressings on the remainder, Deschambault limestone for the ground floor and Miramichi sandstone for the first and second floors; the street fronts crowned with a cut stone cornice and balustrade, and the remaining walls with a brick parapet and cut stone coping. The floor of the basement of concrete and of the other floors concrete and iron; the basement partitions to be brick and those above are iron and concrete covered with wood.

The basement is intended for heating apparatus, fuel storage and stores; the ground floor for the post office, and the upper floor for living apartments.

Plans and specifications prepared by this department.

Superintendent architect, René P. Lemay.

Contractors, Messrs. Jinchereau & Lamonde.

ST. JOHN'S.

POST OFFICE.

This building, which was described in a previous report, is completed and occupied.

CAVALRY STABLES.

This building, which was described in a previous report, is completed and occupied.

SHERBROOKE.

DRILL HALL.

This building, which was described in my report of last year, is still in progress of erection; contracts were entered into for heating and electric light wiring.

Plans, &c., prepared by this department.

Resident superintendent, J. W. Grégoire, architect.

Contractors for construction of building and for heating, Messrs. Simoneau & Dion.

Contractor for electric wiring, A. E. Choquette.

9-10 EDWARD VII., A. 1910

PROVINCE OF ONTARIO.**BARRIE.****PUBLIC BUILDING.**

A canopy was built over the north-west doorway as a protection against snow slides from the roof.

Work supervised by Thos. H. Hastings, clerk of works, Toronto, Ont.

BELLEVILLE.**PUBLIC BUILDING.**

A part of the cement sidewalk was relaid, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

DRILL HALL.

This building which was described in my report of last year was completed, fitted up with electric lighting, hot water heating, armoury and office fittings and furniture.

BERLIN.**PUBLIC BUILDING.**

A tower clock having four dials was installed in the tower, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

BOWMANVILLE.**PUBLIC BUILDING.**

A fire escape was erected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

BRAMPTON.**PUBLIC BUILDING.**

A new door frame was put in for entrance to fire escape and a new flag pole erected to replace that destroyed by lightning.

BRANTFORD.**PUBLIC BUILDING.**

New pavement with stone curb on George street and with stone curb and sewer on Dalhousie street were put in. Some furniture was supplied the Custom House and some window shades and a clock to the Indian office; the street letter boxes were painted, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

DRILL HALL.

New pavement with concrete curb and stone sewer was built on Bridge street and some furniture was supplied, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SESSIONAL PAPER No. 19

BROCKVILLE.

PUBLIC BUILDING.

A fire escape was erected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

CHATHAM.

PUBLIC BUILDING.

King street, in front of building, was paved, new electric light wiring and fixtures were installed, new maple floor was laid in lobby, new tile floor in public lobby and the porches were painted, all under the supervision of Thos. H. Hastings, clerk of Works, Toronto, Ont.

DRILL HALL.

Cement sidewalk was laid; shower baths and ventilator were installed and some furniture supplied. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

CLINTON.

POST OFFICE BUILDING.

A septic tank was put in and some general repairs effected. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

COBOURG.

PUBLIC BUILDING.

A fire escape was fitted to the building and some rearrangement of heating coils done. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

DESERONTO.

PUBLIC BUILDING.

A fire escape was fitted to the building, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

DURHAM.

ARMOURY.

On October 2, 1908, a contract was entered into for the erection of this building on a plot of ground having a frontage of 50 feet on the eastern side of Garafraxa street by 100 feet in depth along a proposed new street on the north side. The building is to have two stories in brick on a stone basement and is to measure on plan 35 feet 10 inches in frontage by 32 feet 4 inches in depth. In basement, the partitions are of brick and the floor of cement, but above, the partitions are of studding and plaster and the floors, stairs and roof of wood. In the basement are furnace room, fuel room, stairway hall and storerooms; on the ground floor are a company armoury, a cadet corps room, a Q.M. store and a stairway hall, while on the first floor are a lecture room, a band room, a company C.O. room and a stairway landing. The building is heated by a hot air system.

9-10 EDWARD VII., A. 1910

There is a one-story detached latrine building of wood on concrete foundation walls and with a concrete privy pit, measuring on plan 10 feet 2 inches by 12 feet 4 inches.

Plans and specification prepared by this department.

Clerk of works, James Lenahan.

Contractor, Hugh McDonald.

FORT WILLIAM.

PUBLIC BUILDING.

The step at the entrance was replaced and an electric ventilating fan was installed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

GALT.

PUBLIC BUILDING.

A retaining wall was built along the river front and some furniture supplied. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

GODERICH.

PUBLIC BUILDING.

An electric burglar alarm was installed and some repairs made to the building. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

GLENCOE.

PUBLIC AND ARMOURY BUILDING.

On September 11, 1908, a contract was entered into for the construction of this building on a plot of ground having frontage of 100 feet on Main street by a depth of 165 feet 9 inches on Symes street. It consists of a main portion 29 feet by 32 feet having two stories, attic and basement, and a one-story adjunct 26 feet by 39 feet. At an angle of the main front is a clock tower four stories and basement. The external walls are brick with stone dressings and on a stone basement, the attic of wood covered with metal; the floor of the basement is concrete and the basement partitions are brick but the remaining partitions and floors, and the stairs and roofs as well, are of wood. In the main portion are a basement for heating apparatus and fuel, a ground floor for the post office, a first floor for customs and inland revenue offices and an attic for caretaker's apartments; in the adjunct is one floor for examining warehouse, armoury, C.O. office lavatory and inland revenue office.

Clerk of works, J. E. Hull.

Plans and specification prepared by this department.

Contractor, Geo. A. Proctor.

HAMILTON.

DRILL HALL.

This building, which was described in a previous report, is completed, fitted up with a steam heating apparatus, electric lighting, office and armoury fittings, &c., ready for occupation.

PUBLIC BUILDING.

The electric lighting system was rewired; new lavatories were installed; the postmaster's office was papered and painted; a number of rooms in the custom house

SESSIONAL PAPER No. 19

were decorated; some storm sashes, window shades and wire guards were supplied and general, usual and ordinary repairs effected, all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

KINCARDINE.

PUBLIC BUILDING.

This building which was described in my report of last year is nearing completion. A hot water heating system and a system of electric light wiring are installed.

KINGSTON.

ROYAL MILITARY COLLEGE.

Servants New Quarters.

This building, which was described in my report of last year, is nearing completion. A hot water system of heating is being installed in each block.

Barrack accommodation for Stables.

On January 27, 1909, a contract for the construction of this building in the outer inclosure, near the stables and facing the Barriefield road, was entered into. The building is to accommodate the N.C. officers and men of the permanent staff attending the stables.

It is a two story brick building on a stone basement and with a wooden attic, measuring 49 feet by 45 feet external dimensions; the lining of the basement walls and the basement partitions are brick, the remaining partitions of stud and plaster; the floors, roof and stairs, excepting the basement floor which is concrete, are of wood, the roof covered with sheet metal.

The basement contains a furnace room, laundry and storerooms; the ground floor, mess rooms, kitchen and lavatories and the two upper floors sleeping rooms.

Plans and specification prepared by this department.

Resident architect, H. B. Smith.

Contractor, M. Sullivan.

LEAMINGTON.

PUBLIC BUILDING.

On December 7, 1908, a contract was entered into for the construction of this building on an irregular plot of ground bounded on three sides by Talbot, Fox and Mill streets and on the fourth by adjoining private property. It is a brick building with stone dressings and on a stone basement consisting of a main portion of two stories measuring 52 feet by 38 feet on plan and a one-story adjunct measuring 32 feet by 15 feet excepting that in the basement, the partitions are brick and the floor cement, the floors, partitions, stairs and roof are wooden. There is a brick safe room on the ground floor.

The ground floor of main portion is the post office and that of the adjunct the postmaster's offices and examining warehouse; in the first floor front are the custom's offices and in the rear the caretaker's rooms, the W.C's, lavatory, bath rooms, &c. Drainage is to a cesspool in the rear of the property.

Plans and specification prepared by this department.

Clerk of works, Samuel O. Roach.

Contractors, W. J. Leslie & W. A. Mitchell.

9-10 EDWARD VII., A. 1910

LONDON.

CUSTOM HOUSE.

The exterior of the building was painted; some new awnings were supplied and an office in the inland revenue fitted up. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

MILITARY STORES BUILDING.

The building was wired for electric lighting; two Browning tanks, grates and furnaces were supplied, and some minor repairs effected. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

POST OFFICE.

An asphalt pavement was laid on the roadway of Queen's avenue and Richmond streets along the post office property and on Dundas street along the drill hall property; alterations were made to plumbing, the street letter boxes were repainted and the bag rack was rebuilt. All under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

MARKHAM.

PUBLIC BUILDING.

This building, which was described in last year's report, is practically completed and is being fitted up with a hot water heating system, office fittings and furniture.

NAPANEE.

PUBLIC BUILDING.

Some furniture was supplied to the post office, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

NIAGARA FALLS.

PUBLIC BUILDING.

Some minor usual and ordinary repairs were effected, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

NORTH BAY.

PUBLIC BUILDING.

Metal lockers were supplied to the armoury, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

OSHAWA.

PUBLIC BUILDING.

A new inclosure fence was built; the drain was overhauled and the vestibule door altered; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SESSIONAL PAPER No. 19

OTTAWA.

ASTRONOMICAL OBSERVATORY, CENTRAL EXPERIMENTAL FARM.

There were supplied 94 large frames covered with duck; one hardwood floor was laid; 89 lineal feet of partition was erected and some carpets, awnings and office furniture were supplied.

BIOLOGICAL LABORATORY, CENTRAL EXPERIMENTAL FARM.

A large quantity of partitioning, shelving and alterations was made and a quantity of furniture, carpets and window shades supplied, under the supervision of this department.

CANADIAN BUILDING.

This is a rented building on Slater street. For the department of the Interior there were supplied and installed 264 drop lights with all necessary wiring, shades, switches, &c., two desk fans, three 4-light clusters, four 2-light clusters and the original lighting entirely rearranged. Call bells were equipped where necessary, 23 rooms were cleaned, retinted and painted, four tin door signs were supplied, as also 11 stepladders, 56 tables, four desks, 11 cupboards, six pairs trestles, 13 window poles, 11 window deflectors, six brackets, one map rack, nine chair cushions, 30 coat and hat strips, one baize door frame, one wooden bath, five door springs and an exceedingly large quantity of shelving. The Trent Valley Canal offices were supplied with furniture, the offices were altered to suit occupants and one room was picture moulded.

Work done under the supervision of this department.

John Shearer, superintendent.

CUSTOM HOUSE.

The Customs was removed from 98 Wellington street to the ground and first floors of the Seybold building on the corner of Sparks and O'Connor streets. New office fittings were supplied for the long room and collectors office and the old long room fittings were re-used in the express office on the ground floor. New double doors were placed at the express entrance and a new window frame on the first floor. The ground and first floors were cleaned, tinted and painted.

Work done under the supervision of this department.

John Shearer, superintendent.

EASTERN BLOCK.

The water closet room of the Privy Council and that of the Privy Council department were entirely renovated including the covering of floors, ceilings and walls. The offices of the Hon. the Secretary of State were refloored, cleaned, tinted, painted, supplied with entirely new plumbing and lighting fixtures and connections as well as new furniture, carpets, filing cases, &c. Throughout the corridors there were 230 yards lineal of burlap dado put on, painted two coats and had a wooden rail stained and varnished. There were 5,142 yards of washing and tinting of walls and ceilings in rooms and corridors. There were five rooms washed and tinted of which three were for the Secretary of State's Department and two for the Privy Council's department; eight hardwood floors were laid, two for the Privy Council Department and six for the Secretary of State's Department: six brass rods and curtains were supplied, one for the Finance Department, two for the Privy Council Department and three for the Secretary of State Department; wash basins were supplied and connected, five for the Auditor General's Department, one for the Indian Affairs Department, seven for the Justice Department and two for the Secretary of State Department; four

9-10 EDWARD VII., A. 1910

rooms were moulded for picture hanging, three for the Finance Department and one for the Department of Indian Affairs; 11 tables were supplied, six for the Finance Department and five for the Indian Affairs Department; electric lighting fixtures were supplied to Finance, five 4-light clusters, two desk lamps, two shades and one meridian, to Indian Affairs; three desk lamps and three drop lights to Justice, seven desk lamps, three 3-light clusters and 10 drop lights, to Secretary of State; three desk lamps and three drop lights; seven screens were supplied, two to the Privy Council Department, three to the Finance Department and two to the Indian Affairs Department; there were supplied to the Finance Department 15 cupboards, two stepladders, two boxes, two cushions, four picture frames; to the Indian Affairs, four name plates, one map rack, two desks, two pairs trestles, three boxes and one cushion; to the Privy Council Department, one new skylight, one new window, three window deflectors, 12 newspaper files, one desk and one chest, and to the Secretary of State Department, one map rack, two comb and brush cabinets, 24 coat and hat hooks on strips and four cushions. The incinerator for destroying condemned bank notes was repaired, a number of chairs were re-upholstered and repairs were made to call bells, glazing, &c.

There were minor jobs such as lettering, painting, general repairs, &c. The double windows and summer blinds were taken off, stored, cleaned and put on periodically, and the roofs, footpaths and roads were kept free from snow during winter.

Work done under the supervision of this department.

John Shearer, jr., superintendent.

GEOLOGICAL MUSEUM, SUSSEX STREET.

Two rooms were picture moulded, the telephone and call bells were wired in the Mines branch, which was supplied with two gas stands and one table lamp. One room was cleaned, tinted and painted and 29 lights were glazed.

Work done under the supervision of this department.

John Shearer, superintendent.

GOVERNMENT HOUSE.

The shingling of roofs of laundry and log cabin at rink was renewed. Of sidewalk there was renewed 885 lineal feet of 2-inch plank walk, 3 feet 3 inches wide, on 6-inch square cedars, 305 lineal feet of 4-inch plank walk 4 feet wide and 37 lineal feet of 3-inch plank crossings 3 feet wide; 210 lineal feet of 6 feet rough board fence were removed to enlarge hot bed and bedding-out ground and, to replace which, as well as to fence along Bowling Green, 408 lineal feet of 6 feet T. & G. beaded board fence was built and painted. 653 lineal feet of 4 strip fence, 4 feet high was built to enlarge potato field and to replace some of the old fence; 41 lineal feet of 6 feet picket fence and a new gate 9 feet wide were rebuilt at the end of ice house; 275 lineal feet of three rail fence at back of garden hedge was replaced by a strip fence; 710 lineal feet of boundary picket fence was renewed and 409 lineal feet of low picket fence was removed from south-west side of road to cottage.

The pent house in tennis court was taken down, repaired, made good and painted. The temporary buffet and sitting out room, 82 feet by 41 feet, was put up on lawn on occasion of State ball, decorated and afterwards removed and stored for future use. New wrought and moulded posts were made for gateway of old avenue.

A shed 32 feet by 10 feet by 12 feet was built at greenhouse for storage of hot-bed sash, pots, tubs, &c., and a 30 feet lineal addition was made to small greenhouse and fitted up with tables, beds, heating pipes, &c. An oat bin was built for the stables, and for the house 18 table tops, 12 trays, two mirror stands, one seat stand, one table, two cases of shelving, a couch frame, a chest, a box for books, six cases for cloak rooms, two stepladders and new loose covers for sofas and chairs. For the greenhouses and gardens there were made shelving, 36 shade screens,

SESSIONAL PAPER No. 19

64 tubs, 28 hot-bed and melon frames, 10 iron tying frames, 360 boxes for bulbs cuttings and cut flowers and packing cases for plants sent to Quebec; valves were placed at all coils in rose and carnation houses and under the propagating tables to regulate temperature, and the plumbing overhauled and repaired.

Repairs and renewals were made to shutters, furniture, ranges, stoves, smoke jack, heating apparatus, coils, circulations, baths, closets, sinks, electric lighting, electric bells, winter sash, blinds, mosquito screens, &c., a new Quebec heater was supplied as also a number of reflector lights as well as the temporary lighting of buffet and sitting-out room put up and removed. At the house, there were 2,783 yards of two and three coat painting, 655 yards cleaning and tinting, 153 yards staining and shellacing floors, 73 yards papering walls and ceilings, 15 yards bronzing coils and chairs, 22 yards enamelling foot baths, 45 yards cleaning and enamelling furniture, 750 yards frosting glass, conservatory walls, 750 yards five times lime washing conservatory roof, 105 yards japanning pipes and 31 days of painter polishing ball room floor, lettering and patching. There were 2,608 feet of glazing greenhouses, including renewals, and 405 feet of glass renewed in windows of house. A refrigerator, 35 yards of tapestry carpet and 16 yards cocoa matting were supplied for the coachman's and stableman's rooms. At the house, were supplied 49 hot water cans, two hearth rugs, six flags; a small quantity of velours, cretonne, sateen, turkey red cotton and silk for covers and curtains; vases, bowls, trays, pots, stands, goblets and other ornaments, 33 in all; of china, 26 side dishes, 476 plates, 30 bowls, 364 cups and saucers, 74 egg cups, 10 jugs, 9 tureens, 15 vegetable dishes, 24 saucers only and six covered muffin dishes; of stoneware, 28 side dishes, 100 plates, 10 tureens, 3 vegetable dishes, 25 pudding dishes and 30 jugs; of glassware, 40 dozen tumblers, 69 decanters, 18 glass jugs, 188 champagne glasses, 203 claret glasses and 24 fruit bowls; of utensils, 34 galvanized iron pails, 20 coal scuttles, 3 coal shovels, six pastry brushes and two pots; there were retinned 554 inches of copper.

At Rideau Cottage, one large chimney shaft was taken down to roof line and rebuilt in firebrick; two chimney caps were relaid; 150 yards of two-coat painting, 50 yards staining and shellacing floors, 10 yards bronzing and 205 yards cleaning and tinting were done; the chimneys were cleaned and all stoves, ranges and heating apparatus overhauled and made good; new carpet was supplied for one room and a stairway; a number of carpets were made over and all the carpets, rugs and mats were lifted, cleaned and relaid; cocoa matting was supplied for verandah steps, linoleum for vestibule, one door mat and six pairs lace curtains. There were also supplied two dozen hangers, five sash ventilators, two desks, two tables, five thermometers, one candlestick, 24 hobèches, 8 caraffes, 1 teapot, 3 bowls, 3 jugs, 20 cups and saucers, 12 soup plates, 1 muffin dish, 30 tumblers and wine glasses, one ice cream freezer, together with kitchen utensils consisting of pots, pans, tins, boilers, cans, brushes, kettles, plates, scuttles, saws, forks, knives, &c., &c., 140 in number.

The conservatories were kept in order, the hay was cut and housed, the lawns, drives, &c., rolled and otherwise tended. The ice-house was stored with ice. The roofs, paths, slides, rinks, &c., were cleared of snow by the departmental staff, by whom the grounds, lawns, gardens and plant-houses were maintained. The curling and skating rinks were flooded and tended and the toboggan slide was kept in order.

The usual periodic cleaning, packing and unpacking were done; arrangements for and attendance on entertainments were furnished, and the rinks, slides, &c., kept in order.

Work done under supervision of Wm. Hutcheson, superintendent.

LABOUR DEPARTMENT, METCALFE STREET.

This is a rented building (the Molson Bank building). There were supplied, six 12-inch electric fans, two office tables, four Yale locks, two floor mats, one coal

9-10 EDWARD VII., A. 1910

box, one door and 77 lineal feet of shelving. Three rooms were cleaned and repairs made to the furniture. All under the supervision of this department.

John Shearer, superintendent.

LANGVIN BLOCK.

On the top floor, an entire rearrangement of the electric lighting was made, resulting in the separate lighting of each desk. Herein throughout the different branches of the Interior Department 264 drop lights, nine desk lamps, four 2-light and three 4-light fixtures were supplied. The coils on top floor in registration branch of Interior Department were moved from the middle. In the basement, an incinerator for destroying cancelled postal notes was erected. 40 rooms were cleaned, tinted and painted, 14 in the Agriculture, three in the Post Office and 23 in the Interior; all the corridors throughout are in process of being cleaned, tinted and painted; four brass rods and curtains were supplied the Agriculture; 67 tables were supplied in the Agriculture, five in the Post Office and 56 in the Interior; nine pigeon-hole cases were supplied, six in the Agriculture and three in the Post Office; 28 cupboards were supplied, five in the Agriculture and 23 in the Interior; stepladders were supplied, eight in the Post Office and 11 in the Interior; 19 window deflectors and ventilators were supplied, two in the Agriculture, six in the Post Office and 11 in the Interior; office desks were supplied, two in Agriculture, seven in the Post Office and nine in the Interior; two doors were changed in position, the wall broken through and made good and the openings resulting built up; 319 chests, strong boxes and packing boxes were provided, nine in the Agriculture, 306 in the Post Office and four in the Interior; there were supplied to the Interior four tin signs, four screens, six stools, 30 strips with hat and coat hooks, one baize door, one wooden bath, five door springs, 13 window poles, five shutters and frames, one map rack, to the Post Office, two blackboards, three screens, 14 cabinets, six window poles, six straight edges, seven latch locks, 60 lineal feet of partition, 35 drop lights and three desk lamps, and, to the Agriculture, 24 feet shelving and numbers on 33 doors; 21 lights were glazed in the Interior, 14 lights in the Post Office and a number in the Agriculture.

General repairs and renewals were effected to the elevators, heating, lighting, water supply, plumbing, carpentry, plastering, furniture and fittings throughout.

Work done under the supervision of the department.

John Shearer, Superintendent.

MAJOR'S HILL PARK.

Eight hundred and thirty trees, shrubs and herbaceous plants were added to complete the shrubbery and 1,300 to cover bare spots on cliff. The mound at the rock garden near the lake, was sodded. The spring display of bulbs required 44,000 of them while the autumn display had 150 varieties (1,000) plants of chrysanthemum besides orchids, begonia, gloire de Dijon, &c., &c.

Work carried out under the supervision of the department.

John Shearer, superintendent.

MARINE STORES, SUSSEX STREET.

This is a rented building adjoining the museum annex. All the cupboards were numbered consecutively and a number of carpets and articles of furniture supplied.

John Shearer, superintendent.

OFFICES NO. 98 WELLINGTON (NAGLE BLOCK.)

This is a rented building. This building was formerly occupied by the Ottawa Customs, which now occupy the Seybold block corner of Sparks and O'Connor streets.

SESSIONAL PAPER No. 19

The officers of the Marine Stores branch of the Marine and Fisheries Department were moved into the ground floor and the penitentiaries branch of the Justice Department into the upper floor.

All the offices of the Marine and Fisheries in this building were cleaned, tinted and painted, had the doors numbered and supplied with tin door plates and there were supplied nine cupboards, eight tables, four chests, three screens, six picture frames, nine files, one newspaper rack, three deflectors, three cabinets three cushions, six locks and 36 coat and hat hooks on strips; 25 lineal feet of partition was erected and repairs made to office furniture, doors, floors, &c.

A circular cast iron stairway was put in to afford access to the ground floor vault; two window frames and five new doors and frames were put in; 97 lineal feet of partition were erected, a tin uniform case and office furniture was supplied, repairs were made to original furniture, the offices were cleaned, tinted and painted and 13 lights reglazed.

Work done under the supervision of the department.

John Shearer, superintendent.

PARLIAMENT BUILDINGS.

The addition to the west wing, referred to in previous reports, was practically completed before the opening of Parliament. The steam heating in the entire west wing was renewed as well as the bulk of the plumbing and lighting including fixtures as well as piping and connections, all of which was done by the departmental staff. The new offices were fitted up and furnished; room 16 had the ceiling renewed and the room painted, tinted and furnished with burlap dado. All the corridors and rooms of the old portion of the west wing were cleaned, tinted and painted or papered. The walls of the Commons Chamber were cleaned and touched up in oil. The lettering on the portraits in corridors was renewed. Alterations of the floor of the Senate Chamber were made to increase the seating capacity. To offices in the west wing were supplied, in addition to plumbing, heating, wiring, &c., and, exclusive of the furniture, fittings and carpets supplied to the new offices, five cupboards, 57 desks, two chests, 11 sets book shelves, 54 files, 11 stepladders, three cloth covered doors, 300 rollers, 13 brass rods with curtains, six table tops, 85 chairs and eight boxes.

In the Senate or east wing a large number of rooms were cleaned, tinted and painted, some additions were made to the heating, lighting, water and drainage services and repairs were made to furniture and fittings throughout. In the Library of Parliament a large quantity of shelving was added, some lighting fixtures were supplied and the books were cleaned by the vacuum process.

Work done under the supervision of the department.

John Shearer, superintendent.

PARLIAMENT GROUNDS.

The use of the bay at the north end of Bank street and the Supreme Court building as a dump for ashes and street scrapings was discontinued and the area formed by the process of dumping was levelled with 330 loads of soil and sodded. Alterations necessitated by the addition to the west block were made in the driveway and in the adjoining terrace.

The stone fence wall along Wellington and Bank streets was pointed and the iron work painted. On the Lovers' Walk, a brick sewer was built, the stone walls on the east side were repaired, the lookout was removed and replaced by a new one, and all the stairs were repaired. A cement walk was built at West Block, the cross-ings and sidewalks throughout the grounds were repaired, trenches were made for

9-10 EDWARD VII., A. 1910

the electric cables, 147 lights were reglazed in the government greenhouse and 18 signs in English and French were painted and set up. 49,000 bulbs were used in the spring display.

Work executed under the supervision of Jno. Shearer, Superintendent.

POST OFFICE BUILDING.

The plinth course of the external wall was rechiselled and pointed, an addition was made to the mail entrance and a new letter drop put in. The elevator was painted. Observation galleries were erected on ground and first floor; water filters and window awnings as well as a number of carpets and articles of furniture were supplied, and some changes made in plumbing.

The street letter boxes were painted, 102 letter and 30 parcel boxes.

Work done under the supervision of the department.

J. Shearer, superintendent.

PRINTING BUREAU.

The old boilers and the steam mains and branches in the boiler room were overhauled and repaired, the plumbing and electric wiring were in part renewed; a quantity of hose was supplied; the floor of the engine room was painted as also the woodwork, and the walls were tinted. The lavatory cupola was renewed in galvanized iron; a partition 55 feet in length was erected; a lattice platform was erected before the switchboard; there were supplied six window deflectors, nine ventilators, two desks, one work bench, two cupboards, two chair cushions, one chair, one rug, and linoleum to three office doors.

The motive power of the machinery was changed from steam power to electricity, involving the installation of a motor generator set of 75 kilowatts capacity, switchboards, transformers and 70 direct connected motors.

Work supervised by this department.

Jno. Shearer, superintendent.

REPAIRING STREETS, &c.

The planking in yard of the Museum, Sussex street, was removed and the area covered with ashes and sodded and a plank walk laid from George street to the yard. As the dump at north end of Bank is abandoned all the ashes and scrapings are drawn to Nepean Point.

Scraping, cleaning and general repairs were done to the various roadways, footpaths and streets, under the control of the department. Rubbish, scrapings and ashes were removed from the East Block, West Block, Langevin Block, Parliament Buildings, Workshops, Post Office, Printing Bureau, Museum, Archives building, Military Store building, the Mint, the several rented buildings and the various streets, and deposited at Nepean Point; the grass at Printing Bureau, about Cartier Square, Wellington street, two bridges, Survey office, Fisheries Museum, Archives building and Geological Museum was kept clipped, manure was drawn on and removed therefrom, and the ashes removed from the boiler houses and furnace rooms of the various buildings; the roadways, sidewalks, footpaths, roofs and yards were kept clean of snow and the footpaths sanded during the winter.

Work done by the departmental staff.

Superintendent, John Shearer.

RAILWAY MAIL SERVICE.

The offices of this branch of the Post Office Department were moved into the third floor of the Seybold building, which is a rented building on the corner of Sparks and O'Connor streets. These offices were partitioned, cleaned, tinted, &c., as required.

Work done under the supervision of this department.

J. Shearer, superintendent.

SESSIONAL PAPER No. 19

ROYAL MINT.

The lighting of grounds was completed, the lead-covered cable placed in vitrified clay conduit and the lamps hung on cast-iron posts; a gas main was laid from the building to the gate house; some telephone and call bell wiring was done and two lamps supplied; new traps were supplied on the laboratory wastes, cement piers were built from basement floor up through ground floor to carry the scales; the entrance gates, lampposts, elevator cage, boilers, pipes, coal bins and window screens were painted.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

SUPREME COURT BUILDING.

A new chimney was built from basement up to and through roof, and new mantels and fireplaces were put in the offices of the chief justice and registrar, which offices were cleaned, tinted and painted; 16 lights were glazed; a gas stove was placed in the messengers' room, and there were installed four electric fans and one drop light.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

TRAFALGAR BUILDING, CORNER BANK AND QUEEN STREETS.

Offices were rented in this building for the Accountants' Branch of the Interior Department, the Civil Service Commission and the Annuities Branch of the Trade and Commerce. The five rooms assigned to the Civil Service Commission were tinted, the floors oiled, a burlap dado hung around one of the offices, wiring was done for a telephone and a call bell system, the doors were lettered and the offices were completely supplied with furniture, carpets, curtains, shelving, stepladders, &c., &c.

In the Interior offices, a complete system of call bells and two water filters and coolers were installed.

In the Trade and Commerce offices, the telephone and electric bells were wired and complete sets of office furniture and fittings, carpets, shades, &c., were supplied.

Work done under the supervision of this department.

Jno. Shearer, superintendent.

WESTERN BLOCK.

Considerable masonry, placing steel beams, &c., were done in connection with the new lavatory for the Customs Department; cement bases were built to carry instruments in electrical laboratory and gas fittings and steam connections provided in standard laboratory. A brick partition with fireproof door was built in attic to form one side of the chief architect's plan room. The interior of the ground floor and mezzanine water closet rooms as well as all the fixtures, drain pipes and skylight were removed and replaced by new. The southwest end of the ground floor corridor, in the Trade and Commerce Department, was partitioned off for use as an office.

Throughout the corridors, the doors and frames were repainted and varnished as well as lettered where required; 230 lineal yards of burlap dado were hung, painted two coats and bordered by a wooden rail painted and varnished. 30 rooms were cleaned, tinted, painted and the floors oiled, three in the Customs, four in the Inland Revenue, 13 in the Marine and Fisheries, eight in the Public Works and two in the Railways and Canals; 50 new windows were renewed, three in the Customs, three in the Marine and Fisheries, 31 in the Public Works and 13 in the Railways and Canals; 31 hardwood floors were laid, nine in the Customs, three in the Marine and Fisheries, 13 in the Railways and Canals and six in the Public Works; 18 brass rods and curtains were supplied, four in the Customs, five in the Inland Revenue and nine in

9-10 EDWARD VII., A. 1910

the Railways and Canals; 15 cupboards were supplied, one in the Customs, two in the Inland Revenue, seven in the Marine and Fisheries, one in the Mounted Police and four in the Railways and Canals; 26 cabinets were supplied, 14 in the Customs, four in the Inland Revenue, three in the Marine and Fisheries and five in the Railways and Canals; 20 tables were supplied, 12 in the Customs, three in the Railways and Canals, two in the Inland Revenue and eight in the Marine and Fisheries; 645 packing cases were supplied, 111 in the Customs and 534 in Public Works; boards with hat and coat hooks were supplied, three in Inland Revenue, 45 in Public Works and 56 in Railways and Canals; seven fire screens were supplied, two in Customs, three in Marine and Fisheries and two in Mounted Police; 16 stepladders were supplied, five in Marine and Fisheries, five in Public Works and six in Railways and Canals; chests were supplied, five in Marine and Fisheries, nine in Public Works and three in Railways and Canals; four rooms were picture moulded, three in Marine and Fisheries and one in Railways and Canals; 10 window deflectors were supplied, three in Marine and Fisheries, one in Inland Revenue and six in Public Works; 33 picture frames were supplied, 21 in Public Works, six in Marine and Fisheries and six in Railways and Canals; nine cushions were supplied, three in Marine and Fisheries and six in the Public Works; of electric lighting fixtures there were supplied to the Trade and Commerce five drop lights, to the Railways and Canals 16 drop lights and two desk lamps, to the Marine and Fisheries 39 drop lights and 11 desk lamps, to the Public Works one three-light cluster and one drop light, to the Inland Revenue, six lamps and 17 drop lights; three electric clock dials were supplied, one to the Inland Revenue, one to the Marine and Fisheries and one to the Railways and Canals; four washbasins were supplied, two to the Inland Revenue and two to the Railways and Canals; there were supplied to the Customs, three chimney caps and one blower; to the Inland Revenue two folding shelves, 13 brackets and one telephone box; to the Marine and Fisheries one newspaper rack, nine files, six locks and 25 lineal feet of partition; to the Public Works 18 trestles, seven straight edges, four ice boxes, four drawing boards, five pigeonhole cases, four winter sash, three footstools; to the Railway and Canals three bookcases, four cloth-covered doors, one door and frame, two desks, three door springs and two locks; 14 fans driven by electric motors were supplied, eight to the Marine and Fisheries and six to the Public Works; lights were glazed, 23 in Marine and Fisheries, 168 in Public Works and 261 in Railways and Canals.

There were also repairs to a large number of articles of furniture, as also minor jobs of painting, lettering and of joinery. The roofs, roads and footpaths were kept free from snow. The winter sashes and summer blinds were cleaned, put on, taken off and stored periodically.

Work done under the supervision of this department.

Superintendent, John Shearer.

MILITIA BUILDING, SLATER STREET.

This is a rented building occupied by the Department of Militia and Defence. The electric lighting system was rearranged, the Deveau telephone system was removed and the call bell system overhauled. There were supplied three electric fans, nine desk lamps, 28 drop lights, 11 tables, six cabinets, five window poles, six window frames, seven cupboards, as well as 71 lineal feet of cupboard with sliding doors, two brass rods with curtains, two cushions, nine deflectors, one map rack, 45 hooks on strips, two clocks, four awnings and one radiator; nine rooms were cleaned, tinted and painted, four floors were cleaned and oiled, four desks were recovered in cloth, three door checks and three door stops were supplied, and repairs were effected to two clocks, 16 chairs as also to floors, doors, carpets, &c. There were supplied and installed three electric fans, nine desk lamps and 28 drop lights.

Work done under the supervision of this department.

John Shearer, superintendent.

SESSIONAL PAPER No. 19

WOOD'S BUILDING, 66 QUEEN STREET.

This is a rented building occupied by the Railway Commission. The bell service was completely rearranged and added to; additional offices were lighted; the rooms of the Assistant Chief Commissioner and those of Commissioner McLean were rearranged, new partitions erected, coils bronzed and floors oiled; the court and five other rooms were cleaned, tinted and made good.

The doors were lettered and had door checks, and there were supplied 14 packing cases, two chests, one cabinet, one notice board, five stepladders, 60 coat and hat hooks on strips, two brass rods with curtains, as well as furniture and fittings for new offices. Repairs were made to furniture, fittings, &c.

Work done under the supervision of the department.

John Shearer, superintendent.

BUILDINGS AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing, there are innumerable smaller works, i.e., there are items of repair done by the roofers, the masons, plumbers and other trades; items taking each a number of days' work of a tradesman, besides material to accomplish. Besides all these, in connection with the various other buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings; also such works as repairs to and renewals of coal and other sheds, as well as works of a general character, such as the erection and taking down and storing of porches, winter boarding outside steps, &c., &c., all of which are done by the departmental staff.

PARKHILL.

PUBLIC BUILDING.

On December 7, 1908, a contract was entered into for the construction of this building on a plot of ground having a frontage of 50 feet on Main street by a depth of 150 feet along King street. The walls of this building are of brick with stone dressings and on stone basement walls; the floors, stairs, partitions and roofs are of wood, excepting that the basement floor is cement and the partitions brick; the slopes of roof and dormers are covered with sheet metal and the deck with tar and gravel. There is a main portion of two stories, basement and attic measuring 40 feet frontage by 31 feet depth and a one story and basement adjunct in rear 24 feet by 15 feet. In the basement of the main portion are the heating apparatus and fuel, and in that of the adjunct a toilet room; on the ground floor main portion is the post office and in the adjunct the examining warehouse; on the first front is the Customs offices and on the first floor rear the Inland Revenue offices, whilst the attic is arranged as apartments for the caretaker.

Plans and specification prepared by this department.

Clerk of works, James Phelan.

Contractors, W. J. Leslie and W. A. Macheill.

PETERBOROUGH.

DRILL HALL.

This building, which was described in my report of last year, is nearing completion, it is fitted up with a hot water heating system and electric light wiring.

POST OFFICE

An electric fan was installed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

9-10 EDWARD VII., A. 1910

PORT ARTHUR.

An addition to the post office was erected, wired for electric light and fitted up; some furniture was supplied to customs and the heating system repaired; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SARNIA.

PUBLIC BUILDING.

The stone work of the walls was pointed, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SAINT CATHARINES.

PUBLIC BUILDING.

The eavestrough and conductors were repaired; the interior of the building was cleaned, tinted and painted and a new clock was supplied to the customs; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

ST. MARY'S

PUBLIC BUILDING.

Wrought iron canopies were put over the post office and customs entrances and a galvanized iron tank with force pump and pipes to supply soft water for domestic purposes was put in; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SAULT STE. MARIE.

The walls and ceilings of the post office were painted, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SIMCOE.

PUBLIC BUILDING.

This building, which was described in last years' report, is nearly completed.

STRATHROY.

COMPANY ARMOURY.

This building, which was described in my report of last year, is nearly completed. It is wired for electric lighting, has a hot water heating system and a drainage system to a septic tank; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

STRATFORD

POST OFFICE.

The interior of the building was painted and varnished and new furniture was supplied to the Customs; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SESSIONAL PAPER No. 19

TORONTO.

DRILL HALL.

This building, which was described in a previous report, is completed and fitted up.

ASTRONOMICAL OBSERVATORY.

This building, which was described in my report of last year, is still in progress and will be completed early in the next fiscal year.

CUSTOM HOUSE.

A large quantity of office furniture and of floor covering were supplied and some additional electric lights supplied, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

EXAMINING WAREHOUSE.

No. 1 elevator was rebuilt and new railway iron laid in roadway thereto; old floors were taken up and replaced by new; a new doorway was cut through Dominion Express Company to No. 3 elevator, the pent house was covered and iron work repaired; all under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

MAGAZINE AT OLD FORT YORK.

On September 14, 1908, a contract was entered into for the construction of this building on the ordnance property, Old Fort, Toronto. It has brick walls and partitions on a concrete foundation, re-enforced concrete roof and a concrete floor covered with asphalt. A concrete footpath abuts the outside of the wall at every point. The building measures 69 feet in length by 22 feet in breadth and has an adjunct at both ends 10 feet long by 13 feet broad.

Plans and specification prepared by this department.

Work supervised by Thos. H. Hastings, clerk of works, Toronto.

Contractors, A. C. Baker and Anders Joodahl.

POST OFFICE.

The additions and alterations described in last year's report were carried out, and in addition there have been installed new post office fittings, elevator, heating system, furniture, electric light, wiring and papering.

The street letter boxes were repainted.

Work supervised by Thos. H. Hastings, clerk of works, Toronto, Ont.

WALKERTON.

ARMOURY.

This building, which was described in last year's report, is completed and fitted up with hot water heating apparatus, furniture, &c.

WELLAND.

PUBLIC BUILDING.

On September 16, 1908, a contract was entered into for the construction of this building on an irregular shaped plot of ground fronting on Canal street, adjoining the northern boundary of the town hall site. There is a main portion measuring 56

9-10 EDWARD VII., A. 1910

feet frontage by 65 feet in depth, the foremost 30 feet of which is three stories and basement and the remainder two stories and basement; in the rear, a one story adjunct, without basement, measuring 27 feet by 36 feet. The walls are of brick with stone dressings and are on stone basement walls, brick safe rooms on basement, ground floor and first floor; brick partitions on basement and ground floor, main portion and the remaining partitions, the floors stairway and roof, excepting the floor of basement which is concrete, of wood.

In the main portion, the basement is for heating apparatus; the ground floor is for the post office; the first floor is for Customs and Inland Revenue offices, post-master's office, postal customs office and lavatories, and the second floor for living apartments; in the adjunct are the examining warehouse, weights and measures office and lavatory.

Plans and specification prepared by this department.

Clerk of works, Edgar Rounds.

Contractors, Nagle and Mills.

WHITBY.

PUBLIC BUILDING.

On October 16, 1908, a contract was entered into for the construction of this building on a plot of ground situated at the intersection of Dundas and Brock streets, having a frontage of 104 feet 3 inches on Dundas street by a depth of 67 feet 10 inches along Brock street. The building consists of a main portion 58 feet by 39 feet, two stories and basement of stone, brick-lined, surmounted by a wooden attic and having a four story tower at the street corner; in the rear of the main building is a one story and basement adjunct 15 feet 9 inches by 40 feet 9 inches. There are brick safe rooms and brick partitions on basement, ground floor and first main portion, but excepting the basement floor, which is concrete, all the floors, partitions, roofs and stairs are of wood, the slopes of roofs and the dormers covered with sheet metal, the deck roofs with tar and gravel.

The basement is for heating apparatus, fuel and stoves; the ground floor of the main portion is for the post office, of the adjunct for the examining warehouse, weights and measures and lavatories; on the first floor front is the custom offices and lavatories, in the rear the inland revenue offices and stairway, and in the attic, caretaker's apartments.

Plans and specification prepared by this department.

Clerk of works, W. H. Bradshaw.

Contractors, H. Gay & Sons.

WINDSOR.

PUBLIC BUILDING.

The external surface of the stone foundation was cleaned, the letter chute repaired and the storm porch painted, under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

WOODSTOCK.

PUBLIC BUILDING.

The exterior and a portion of the interior of the building were painted; a fire escape was built to caretaker's quarters; changes and some new springs to doors and some electric lights altered.

Work done under the supervision of Thos. H. Hastings, clerk of works, Toronto, Ont.

SESSIONAL PAPER No. 19

PROVINCE OF MANITOBA.

BRANDON.

ARMOURIES.

This building, which was described in last year's report, was completed, fitted up with a hot water heating apparatus and furnished for occupation.

PUBLIC BUILDING.

Some filing sections and a number of articles of furniture were supplied the post office, and some repairs and renewals to offices and furniture of customs made under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

DAUPHIN.

POST OFFICE, LANDS OFFICE AND CUSTOMS OFFICE.

On August 20, 1908, a contract was entered into for the construction of this building on lot No. 16 and the most southeasterly and easterly 75 feet of No. 17, all in Block 9, Dauphin.

It is a two story brick building on a stone basement, surmounted by a wooden mansard, and measures 52 feet frontage by 50 feet depth. The basement floor is for the heating apparatus and fuel; three-quarters of the ground floor frontage by the depth is for the post office, the remainder occupied by a stairway in front and a customs office and examining warehouse in rear; on the first floor are the land offices and in the attic are two offices and the caretaker's apartments. There is a brick safe room on both ground and first floors; there are brick partitions in basement and cement floor in basement; the remaining partitions and floors as well as the stairway and roof are of wood, and the roof covered with sheet metal.

Plans and specification prepared by this department.

Clerk of works, W. Bessons.

Contractor, S. Brown.

EMERSON.

PUBLIC BUILDING.

On November 20, 1908, a contract was entered into for the construction of this building on a plot of ground situated at the intersection of Main and Dominion streets, with a frontage of 50 feet on Main street by a depth of 140 feet along Dominion street. The building is two stories, of brick, on a stone basement and consists of a main portion, having a frontage 43 feet by a depth of 37 feet 6 inches, and an adjunct in rear 29 feet 6 inches in breadth by 22 feet in depth.

The basement is for heating apparatus, fuel and stores; the ground floor, main portion, is for the post office and the adjunct for examining warehouse, weights and measures and brick safe room; on the first floor the main portion, front, is for the Customs, the rear for the Inland Revenue, bath room, cloak room and stairs, whilst in the adjunct are the caretaker's apartments.

Excepting the basement partitions which are brick and the basement floor which is concrete, the floors, stairs, partitions and roof are of wood.

Plans and specification prepared by this department.

Clerk of works, F. Smith.

Contractor, S. Brown.

9-10 EDWARD VII., A. 1910

NEEPAWA.

PUBLIC BUILDING.

This building, which is expected to be completed at an early date, was described in my last year's report. A hot-water heating apparatus is in process of installation.

PORTAGE LA PRAIRIE.

PUBLIC BUILDING.

The Customs offices were extended, necessitating additional fittings and furniture. Work supervised by Jos. Greenfield, resident superintendent, Winnipeg, Man.

SELKIRK.

PUBLIC BUILDING.

This building, which was described in a previous report, is completed, fitted up with a steam heating apparatus, &c.

WINNIPEG.

FORT OSBORNE BARRACKS.

Guard Room, Offices and Stores Building.

This building, which was described in my last year's report, is completed, wired for lighting, fitted for hot-water heating and furnished with steel and other fittings, furniture, &c.

Quarters for Married Men.

This range of dwellings was described in last year's report. It is now completed, fitted up with hot-water heating, wiring for lighting, &c.

NEW EXAMINING WAREHOUSE.

It is expected that this building, which was described in last year's report, will be completed at an early date.

POSTAL STATION 'B.'

This building, described in last year's report, is completed, fitted with a hot-water heating apparatus, postal fittings, furniture, &c.

IMMIGRATION BUILDING NO. 1.

A passenger elevator was installed; some fire extinguishers were supplied; two steel detention cages were erected in basement and iron beds were supplied to all sleeping rooms; all under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

IMMIGRATION BUILDING NO. 2.

Fire escapes were erected; the entire building from attic to basement was cleaned and re-painted. The old partitions at east end were removed and replaced by galvanized iron with metal doors to rooms. Work supervised by Jos. Greenfield, resident superintendent, Winnipeg, Man.

SESSIONAL PAPER No. 19

PROVINCE OF SASKATCHEWAN.

ESTEVAN.

PUBLIC BUILDING.

On February 21, 1909, a contract was entered into for the construction of this building on a plot of ground having a frontage of 75 feet on 4th street by a depth of 120 feet on 13th avenue.

The building has a frontage of 44 feet six inches by a depth of 40 feet six inches exclusive of an adjunct in rear measuring 15 feet six inches by 16 feet six inches. There are two stories of brick on a stone basement and surmounted by a wooden mansard attic. Excepting in the basement, where the partitions are brick and the floor cement, the floors, roof and stairways are wood and the partitions of stud and plaster.

The basement is for the heating apparatus, fuel, stores, &c., and contains a small brick vault in the adjunct; on the ground floor are, in the main portion, the post office and examining warehouse and, in the adjunct, the weights and measures, a small vault for the post office as also a W.C. and lavatory room; on the first floor are the land offices, the entire adjunct on this floor forming one brick safe room, while the entire attic, excepting the men's W.C. and lavatory suite for the officials, is divided into caretaker's quarters.

Plans, &c., prepared by this department.

Clerk of works, G. F. Faulkner.

Contractors, Snyder Brothers.

INDIAN HEAD.

FORESTRY FARM.

The buildings were connected with the water pipe line. A seed drying house was erected.

Works supervised by W. S. Mollard, clerk of works, N.W.T., Regina.

MAPLE CREEK.

PUBLIC BUILDING.

This building, which was described in last year's report, was completed and fitted up with hot water heating apparatus, &c.

REGINA.

IMMIGRATION HALL.

Three new water closets and one urinal were installed, under the supervision of W. S. Mollard, clerk of works, N.W.T., Regina.

PUBLIC BUILDING.

This building was completed, wired for lighting, fitted with hot water heating, post office fittings, furniture, &c., and is occupied.

Plans and specifications prepared by this department.

Works supervised by W. S. Mollard, clerk of works, N.W.T., Regina.

SASKATOON.

PUBLIC BUILDING.

This building, which was described in last year's report was completed, fitted up with hot water heating, &c.

9-10 EDWARD VII., A. 1910

YORKTON.

POST OFFICE, LANDS OFFICE AND CUSTOMS OFFICE.

On August 31, 1908, a contract was entered into for the construction of this building on a plot of ground consisting of lots Nos. 21 and 22 in block 3 of addition to town of Yorkton. It is a two-story building of brick, on a stone basement, surmounted by a wooden mansard and measures 52 feet frontage by 50 feet in depth.

The basement floor is for heating apparatus and fuel; three quarters of the ground floor frontage, by the depth, is for the post office, the remainder occupied by a stairway in front and a customs office and examining warehouse in rear; on the first floor are the land offices, and in the attic are two offices and the caretaker's apartment. There is a brick safe room on both ground and first floor; there are brick partitions and cement floor in basement, the remaining partitions and floors as well as the stairway and roof are of wood and the roof covered with sheet metal.

Plans and specification prepared by this department.

Clerk of works, J. W. Christie.

Contractor, S. Brown.

PROVINCE OF ALBERTA.

EDMONTON.

PUBLIC BUILDING.

This building, which was described in a previous report, is nearing completion.

MEDICINE HAT.

ONE TROOP ARMOURY.

This building, which was described in last year's report, is completed, piped for natural gas, and fitted up with hot water heating and all necessary armoury fittings, furniture, &c.

PROVINCE OF BRITISH COLUMBIA.

CUMBERLAND.

PUBLIC BUILDING.

This building, which was described in my report of last year, is completed, wired for electric lighting and heated by hot water.

Plans and specification prepared by this department.

Clerk of works, James Stewart.

Contractor for the building, Edward Hunt.

Contractor for the wiring, Hayward & Hawkins.

Contractor for the heating, Edward Hunt.

SESSIONAL PAPER No. 19

FERNIE.

PUBLIC BUILDING.

This building, which was previously described, was destroyed by fire on August 1, 1908, and is being reconstructed in accordance with original plans.

LADYSMITH.

PUBLIC BUILDING.

This building, which was described in last years' report, is completed, wired for electric lighting and heated by hot water.

NANAIMO.

PUBLIC BUILDING.

The retaining wall was taken down and rebuilt and a new telegraph office built, under the supervision of Wm. Henderson, resident architect, Victoria.

NEW WESTMINSTER..

PUBLIC BUILDING.

A new carpet was laid in the postmaster's office; a filing cabinet was supplied to Crown Timber office; the brick chimney shafts were cement plastered; changes and repairs were made to electric lighting and general repairs to lock boxes and drawers; all under the supervision of Wm. Henderson, resident architect, Victoria.

ROSSLAND.

PUBLIC BUILDING.

A canopy was constructed over mail entrance and the furnaces and heating coils were repaired, under the supervision of Wm. Henderson, resident architect, Victoria.

DRILL HALL.

A channel to provide surface drainage was excavated at west wall below foundation and cemented, under the supervision of Wm. Henderson, resident architect, Victoria.

VANCOUVER.

NEW PUBLIC BUILDING.

This building, which was described in a previous report, is completed; the hot water heating is completed and the electric light wiring is in progress. A contract for a striking, tower clock was entered into.

ORIGINAL PUBLIC BUILDING.

A doorway and stairway were constructed to give access to basement from parcel room; an addition was made to stamp vendor's office; the main sewer was cleared, changes were made throughout the electric lighting system and the lavatories were cleaned, tinted and painted. Changes were made in the arrangement of the post office screen and there were supplied to the post office, one cupboard, pigeon-hole cases, two desks and five stools; to the Customs, six pigeon-hole cases; to the Inland Revenue,

9-10 EDWARD VII., A. 1910

one chair and one desk, and to the steamboat inspector's office, one cupboard and pigeon-hole cases; all under the supervision of Wm. Henderson, resident architect, Victoria.

DETENTION HOSPITAL, CANADIAN PACIFIC RAILWAY WHARF.

A safe was supplied and the heating repaired; under the supervision of Wm. Henderson, resident architect, Victoria.

VICTORIA.

IMMIGRATION HOSPITAL.

This building, which was described in last year's report, is still in progress and is expected to be completed at an early date.

MARINE BUILDING (OLD CUSTOM HOUSE).

The entire second floor (caretaker's apartments) was cleaned, papered, tinted, and a skylight was constructed; office chairs were supplied to steamboat inspector's office; the heating apparatus was repaired and the flag pole painted; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

PUBLIC BUILDING.

On May 26, 1908, a contract was entered into for an addition to this building formed by inclosing the courtyard, two sides of which consist of the one story adjunct and one side consists of the end of main building, to form a workroom for the post office.

Plans, &c., prepared by this department.

Work supervised by Wm. Henderson, resident architect, Victoria, B.C.

Contractors, Drisdale and Malcolm.

PUBLIC BUILDING.

Repairs, Renewals, Furniture, &c.

Alterations of the heating pipes were made to suit addition to building, some renewals were made to furnace parts and the floor covering of the public lobby of post office was taken up and replaced by mahogany flooring.

There were supplied to the post office, pigeon-hole cases, sorting cases and notice boards; to the Customs, clothes cupboards, pigeon-hole cases, roll-top desk, chairs, screen, money drawers and fittings and furnishings for express parcels office; for the Inland Revenue offices, a Shannon file case and two desks; for the savings bank, a steel cupboard for vault, steel cages for letters and some linoleum, and for the Public Works, a Shannon file case. A new window was made in corridor wall of appraiser's office and one in the corridor wall of the gauger's office; changes were made in the position of a sink; the long room counter was altered and some rooms were cleaned, tinted and painted in the Inland Revenue and savings bank.

Work done under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

OLD POST OFFICE BUILDING.

The roof was overhauled, retarred and gravelled; under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

SESSIONAL PAPER No. 19

WILLIAMS HEAD.

QUARANTINE STATION.

A sulphur di-oxide blast was supplied; a disinfecting tank was installed; additions were made to lighting plant; new steering gear was supplied to the steamer *Madge*; the disinfecting plant was repaired; the flagstaff and chimney shafts were painted; repairs were made to plumbing, and some lumber, sash, frames and hardware supplied. All under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

YUKON TERRITORY.

PUBLIC BUILDINGS.

General repairs and maintenance of the various public buildings throughout the territory was effected, under the supervision of S. A. Bertrand, superintendent of public buildings, Yukon Territory.

LIST OF YUKON PUBLIC BUILDINGS.

Dawson, Administration building.
Dawson, Government House.
Dawson, Post Office.
Dawson, Court House.
Dawson, Government Warehouse.
Duncan Creek, Mining Records Office (rented).
Glacier Creek, Mining Records Office.
Carcross, Mining Records Office (rented),
Kluhane, Mining Record Office.
Sulphur and Dominion, Mining and Inspector's Office (rented).

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION

REPORT OF THE CHIEF ENGINEER.

DEPARTMENT OF PUBLIC WORKS OF CANADA,

CHIEF ENGINEER'S OFFICE,

OTTAWA, July 7, 1909.

NAPOLEON TESSIER, Esq.,

Secretary,

Department of Public Works.

SIR,—I have the honour to submit the annual report on the various works under my charge during the fiscal year ended March 31, 1909.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, weirs, bank and beach protection works: the improvement of harbours and rivers by dredging; the construction, maintenance and operation of government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms: the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the Northwest Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,

Your obedient servant,

EUG. D. LAFLEUR,

Chief Engineer.

PROVINCE OF NOVA SCOTIA.

ABERCROMBIE POINT.

Abercrombie Point, Pictou county, is on the south side of Pictou harbour, between the entrances to the East and Middle rivers, and nearly opposite the town of Pictou.

A wharf, built by the harbour commissioners in 1889, and repaired by the department in 1891-2, has fallen into a dilapidated condition. It was originally a block and span structure, extending 466½ feet to 2 feet at extreme low water, on flats dry at extreme low water to within 167 feet of its outer end. It consists of an approach of brush and stone, 77 feet in length, and the remains of 13 crib-work blocks, of which two are in the T head.

Spring tides rise 6 feet; neaps rise 4 feet.

9-10 EDWARD VII., A. 1910

The sum of \$3,000 was appropriated for expenditure in 1908-09 towards the reconstruction of the wharf, a work estimated to cost \$6,400.

A foreman was appointed and materials with the exception of the creosoted timber (which up to March 31, had not been delivered), were procured during the winter. Work of construction was commenced March 13, and continued up to March 31, when the total expenditure amounted to \$1,855.11. It consisted in reconstructing the four inner blocks from above low water.

AMAGUADEES.

Amaguadees pond, Cape Breton county, is on the northern side of East bay, the eastern arm of the Great Bras d'Or lake, and is distant three miles from Benecadie point, at the entrance to the bay.

The sum of \$1,000 was appropriated for expenditure, during 1908-09, towards the extension of the wharf and, out of the amount voted, the sum of \$362.27 was expended in procuring the native timber, iron and ballast required for the proposed extension.

AMHERST.

Amherst harbour is situated at the head of Chignecto bay, near the mouth of the La Planche river, about two and a half miles from Amherst town. The town of Amherst is probably the most important, prosperous and thriving industrial town in the province of Nova Scotia, and, as it is a manufacturing centre of some magnitude, it can readily be seen that efficient water transportation is essential to its future growth.

During the last fiscal year, out of the \$5,000 granted, the sum of \$4,950 has been expended. The work done consisted in repairing the sheathing, a portion of the covering and the driving of about eighty fender piles on the old pier; the construction of six dolphins on both sides of the circuitous entrance to the harbour; the completion of the covering on the new pier; the construction of a portion of a brush bed; the digging out of the old beds, and the supplying of 150 piles, for siding purposes.

Spring tides rise here 40 feet; neaps, 33 feet.

Work commenced June 20, and completed November 9, 1908.

AMHERST POINT.

Amherst Point is a farming settlement, of some 400 people, situated about 3 miles south of Amherst town.

During the fiscal year of 1908-9, out of the amount granted, the sum of \$979.14 was expended, in the construction of a ferry slip. This ferry runs from Amherst Point wharf to Minudie wharf, and cuts off a drive of about 17 miles, for people wishing to go into Amherst.

The slip is 110 feet in length, 20 feet in width, 17 feet high at the inside end, and 5 feet high at the lower end. It is constructed on pile trestle bents.

Work was commenced here August 15, and completed October 10, 1908.

AMIRO'S HILL.

Amiro's Hill, Yarmouth county, is a farming settlement of some 150 people, situated on the left or eastern bank of the Tusket river, about 4 miles below the village of Tusket.

For the convenience of the inhabitants in landing sea manure and supplies for local consumption, the department, during the fiscal year, built a small public wharf.

SESSIONAL PAPER No. 19

It is constructed of dry rubble stone, and is 60 feet long, 40 feet wide and from 3 to 9 feet high. The work was begun September 8, and completed on December 7, 1908.

Spring tides rise about 11 feet.

Total expenditure, \$989.67.

ANDERSON'S COVE.

Anderson's cove, Annapolis county, is a scarcely perceptible indention in the coast line, on the south side of the Bay of Fundy, 16 miles east of Digby gut, 2 miles east of Litchfield, and 2 miles west of Parker's cove. The settlement, which is called Hillsburn, comprises, within the radius of a mile, about 150 people dependent almost exclusively on the fisheries for a living.

In order to afford some small measure of protection and shelter for the boats, which are often broken or destroyed for lack of shelter, the department in 1905-6, expended the sum of \$1,813.29 in constructing a small breakwater 162 feet long, from 7 to 13 feet high and 26 feet wide.

In 1906-7, the sum of \$1,000 was expended in extending the breakwater by a substantial block of cribwork, 50 feet long, 26 feet wide, and from 12 to 15 feet high.

In 1908-9, the sum of \$3,033.57 was expended in extending the breakwater a further length of 100 feet.

The work was begun September 19, and closed down, though not completed, November 30, 1908. During the winter, the balance to the credit of the work at the end of November was expended in the purchase of timber for the completion of the top of the work.

Spring tides rise about 25 feet.

ANNAPOLIS.

Annapolis, Annapolis county, is the oldest town in the province of Nova Scotia, having been founded in 1605. It is beautifully situated at the head of Annapolis basin and on the south side of the Annapolis river. It has a population of about 2,000 and is the centre of one of the most fertile districts in Nova Scotia.

In 1907-8, the sum of \$12,942.59 was expended in the purchase of creosoted timber for the purpose of constructing three ice-piers in the river, a short distance above the town wharfs for the purpose of protecting shipping from floating ice.

Early in 1908 a contract was awarded by the department for the construction of these piers.

During the last fiscal year, the department expended a small sum in moving a quantity of creosoted timber which had been piled on too low ground.

Spring tides rise 28 feet, neaps 23 feet.

ARGYLE HEAD.

Argyle Head, Yarmouth county, is a thrifty, agricultural community of some 200 or 300 people, situated at the head of Argyle harbour, about 15 miles south of Yarmouth.

For the convenience of the inhabitants, the department, in 1908-9, constructed a small stone wharf, at a cost of \$800. The work, which is of dry, rubble masonry, is 150 feet long, 25 feet wide and from 4 feet to 10 feet high, with fenders and guard timber.

Work was begun October, 1908, and suspended for the season November 30, 1908.

Spring tides rise about 11 feet.

ARISAIG.

Arisaig, Antigonish county, is on the southeastern shore of Northumberland strait, about 15 miles southeast from Cape George.

9-10 EDWARD VII., A. 1910

The works at this place include a pier on the northern and a breakwater on the southern side of the cove.

The sum of \$2,150 was voted for expenditure during 1908-9, for completing the reconstruction of the breakwater and for the reconstruction of the top of the outer 140 feet of the pier; an additional amount of \$500 to complete repairs, was authorized on September 24, 1908.

Of the amount voted, the sum of \$898.40 was expended on repairs to the outer end of the breakwater, consisting of the renewal of parts of the covering, cap and close-sheathing, and in the construction of a new block, 30 by 20 feet, with creosoted timber sub-structure, at the outer end of the work, and for which the materials were procured during 1907-8.

The sum of \$1,661.49 was expended in repairs on the piers as follows:—

From the outer end, inwards, 100 feet of the work was repaired by the renewal of two tiers of timber, floor-stringers, covering, cap and sheathing. The next 40 feet was cut down to low water for a width of 20 feet on the seaward side and rebuilt with new materials. Some slight repairs were made on the inner work, and a space of about 18 inches between the main work and the 'L' was closed up with plank.

The total amount expended during the season on these works is \$2,559.89.

AVONPORT.

Avonport, King's county, is a small farming village with a population of about 250, situated at the mouth of the Avon river (at this point nearly two miles wide), and on the Dominion Atlantic Railway, 12 miles northwest from Windsor, the county town of Hants, and 13 miles east of Kentville, the county town of Kings. Some two or three millions of bricks are made here during the year.

In 1908-9, the sum of \$522.88 was expended in the purchase of materials for the repair and partial renewal of the work.

Spring tides rise about 40 feet.

BADDECK.

Baddeck, the shiretown of Victoria county, is on the northern shore of the Little Bras d'Or lake, near the entrance into St. Patrick's channel.

During 1907-8, a wharf was constructed by the department, 284 feet in length, extending to 18 feet at low water, and consisting of a road approach, 64 feet in length; of a section of cribwork, with creosoted timber substructure, 50 feet long and 48 feet wide and of a creosoted timber pile-extension, 170 feet long and 40 feet wide.

The sum of \$3,500 was appropriated for expenditure, during 1908-9 for improving the property, and the construction of warehouses, and out of the amount voted, up to March 31, 1909, the sum of \$1,851.15 was expended as follows:—

In draining, raising, levelling up and fencing of wharf property, and reshingling the roof and two sides of old warehouse, and in repairing stone foundation under the same.

In procuring all the necessary materials for a new warehouse, 50 by 24 feet, in putting up frame, and boarding in of the same, in fitting up old warehouse for office, waiting room and baggage room, including new outside doors and windows, and in obtaining the native timber required for a cribwork wall around seaward front of property.

BADDECK RIVER (NICHOLSON'S).

The Baddeck river, Victoria county, is a large stream flowing through a rich agricultural district and emptying into St. Patrick's channel, an arm of the Bras d'Or lakes, at a point about 5 miles westward of the town of Baddeck.

The sum of \$600 was authorized to be expended, during 1908-9, for the expansion of the shear-dam, for a distance of 50 feet, with pile, brush and stone work, but as it

SESSIONAL PAPER No. 19

was found that the heavy spring freshets had scoured out the sand at the outer end of the old work, down to the rock, and that the old work was badly injured, it became necessary to repair it; to level up the bottom by laying brush and stone, and to construct the expansion with cribwork, and instead of 50 feet, as intended, only 30 feet could be accomplished.

Total expenditure during fiscal year, \$599.95.

BAILEY'S BROOK.

Bailey's brook, Pictou county, is a large stream emptying into the Northumberland strait, at a point 10 miles to the eastward of the entrance to the Merigomish harbour, and 6 miles to the westward of Arisaig.

The sum of \$3,450 was appropriated for expenditure during 1908-9 in harbour improvements.

Work of construction was commenced August 12, and completed November 30, when the expenditure amounted to \$4,143.88. This amount was expended in extending the protection work, on the eastern side of the entrance, 120 feet; in constructing 80 feet of pile and brush work on top of the beach and 95 feet of brush and stone work in extension, inwards, of the western protection work, and in slight repairs to the shear-dam on the western side of the dam.

BARACHOIS.

Barachois, Victoria county, is a settlement at the mouth of the Barachois river, on the northern side of St. Anne's and about 3 miles from the entrance into St. Anne's harbour. It has a snug little boat harbour, formed by an outlying beach, and connected, at its southern end with the bay, by a shifting channel through the gravel beach.

During 1907-8, the materials, required for the construction of a training pier, 230 feet long and 15 feet wide, on the western side of the entrance, for the purpose of confining the channel and securing a greater depth of water, were procured, and, during the present year, the sum of \$1,098.61 was expended in the construction of the work.

The work consists of pile work, filled in with layers of brush and stone, and close-sheathed on the channel face with plank, driven into the bottom.

Work was commenced on September 1, and completed on October 9, 1908.

BASS RIVER.

Bass River, Colechester county, is a farming and manufacturing village of about 500 people, situated on the north side of Cobequid bay, the eastern arm of the Bay of Fundy. It is half way between Truro and Parrsboro, or about 28 miles from each place.

In 1908-9, the sum of \$177.52 was expended in repairs and renewals to the wharf. Work was begun July 4, and completed July 31, 1908.

Spring tides rise about 35 feet.

BATTERY POINT.

Battery Point, Annapolis county, is a fishing settlement of about 150 people, situated on the east side of Digby Gut, about 4 miles northeast from the town of Digby, and 15 miles southwest from the town of Annapolis.

Spring tides rise 27 feet; neaps, 23 feet.

In 1908-9, the sum of \$466 was expended in the purchase of materials for the extension of the breakwater.

9-10 EDWARD VII., A. 1910

BAYFIELD BREAKWATER.

Bayfield, Antigonish county, is on the southern shore of St. George's bay, 15 miles to the westward of the northern entrance to the Strait of Canso.

The sum of \$1,200 was appropriated for expenditure during 1908-9, in repairs and improvements.

Work was commenced September 1, and completed November 11, when the expenditure amounted to \$1,188.96. This amount was expended in reconstructing the faces and top of the 40-foot extension of the concrete wall, which was disintegrated; in repairs to the stone covering on both sides of the concrete wall from the outer end, inwards, and in placing heavy stones at top of slope on the seaward side, over a distance of about 400 feet from the outer end inwards.

BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria county, is on the northern extremity of the island of Cape Breton, and lies between Cape North and Black point.

At the head of the bay and separated from it by a beach of sand, gravel and stone, there is a small lake or pond, about $\frac{3}{4}$ of a mile in length, and $\frac{1}{2}$ a mile in width, with a considerable depth of water.

During the years 1887-8-9, attempts were made by the department to put a channel, through the beach, into the pond, to open it as a boat harbour, but, as it was not protected from the sea, the channel filled in again with sand.

On September 11, 1907, a contract, in the sum of \$24,550 was entered into for the cutting of a channel to 2 feet below low water and 50 feet wide at the bottom, and the construction of channel protection piers on each side of the channel, 290 feet in length, and extending outwards into 8 feet at low water and consisting of cribwork, of which the outer 140 feet have creosoted timber sub-structure.

The work was commenced on June 9, 1908, and up to October 27, when the work was suspended for the season, the protection piers were fully completed, and about one-half of the work in the excavation of channel was done.

Total expenditure during the fiscal year was \$22,230.75.

BEAR COVE.

Bear Cove, Digby county, is a slight indentation, not more than 400 feet deep, in the coast of the mouth of St. Mary's bay, Bay of Fundy. It is situated 23 miles north of Yarmouth, and equi-distant from Cape Cove, on the south, and Meteghan, on the north, being about 5 miles from each. The population of the settlement, within a radius of a mile, comprises a couple of hundred of people, chiefly dependent for a living on fishing, though some little farming is carried on.

In 1908-9, the sum of \$599.69 was expended in replacing with cribwork the stone approach which had been knocked to pieces by heavy seas in the previous winter. The new work is 100 feet long, 10 feet wide and from 5 to 8 feet high. It was begun October 27, 1908, and finished November 30, 1908.

BEAVER HARBOUR.

Beaver Harbour, Halifax county, is situated 65 miles, in air line, east of Halifax. It has a farming and lumbering population of from 300 to 400 people.

In 1908-9, the department expended the sum of \$471.53 in building a small break-water-wharf for the convenience of the inhabitants. The work is of substantial cribwork, 80 feet long, 20 feet wide and from 4 to 11 feet high. The work was begun August 24, 1908, and completed September 15, 1908.

Spring tides rise 6 feet

SESSIONAL PAPER No. 19

BEAVER RIVER.

Beaver River, Digby county, is a prosperous fishing and farming village of some 400 people, situated on the coast of St. Mary's bay, 13 miles north of Yarmouth, and on the county line between Digby and Yarmouth.

In 1908-9, the sum of \$2,471.55 was expended in extensive repairs and renewals; a length of 180 feet, on the northern side of the breakwater, was rebuilt either in whole or in part, 50 feet of this length being entirely rebuilt from the bottom, 15 feet high. Of the remaining 130 feet, the top was removed and rebuilt to a height of about 7 feet. In addition to this, a small block was built on the south side of the shore end of the work to serve as a break, the block being 32 feet long, 6 feet wide and 5 feet high.

Spring tides rise about 15 feet.

The work was begun September 10, 1908, and completed November 30, 1908.

BELFRY GUT.

Belfry gut, Cape Breton county, the outlet to Belfry lake, which is otherwise separated from Fourchu bay (on the Atlantic coast of Cape Breton island) by a series of islands and connecting sand and gravel beaches, is at the western extremity of Belfry lake, and 2 miles to the eastward of the entrance to Fourchu harbour.

During the fiscal year 1908-9, the sum of \$300.65 was expended in improving the entrance to Belfry lake by deepening, in a channel 15 feet in width at bottom to 1½ feet below surface level at low water, through the ledge and through gravel, over a distance of 300 feet from the ledge inwards, and in closing a false channel with brush and stone. Work was commenced September 1, and completed October 7.

BELLIVEAU'S COVE.

Belliveau's Cove, Digby county, is situated on the eastern shore of St. Mary's bay, about 4 miles southwest of Weymouth. It has a population of from 200 to 300, and is one of the most important shipping and fishing ports on the coast of Digby county.

In 1908-9, the sum of \$1,999.21 was expended in taking down and rebuilding a piece on the shoreward end of the western breakwater, 250 feet long, 30 feet wide and 10 feet deep. The work was begun on September 14, and completed October 31, 1908.

BIG BRAS D'OR.

Big Bras d'Or, Victoria county, is a settlement on the south side of the channel of the same name, near its entrance into the Atlantic.

The wharf, completed during 1888-9, is a block and span structure, 150 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 40 by 20 feet, constructed entirely of native timber, and with a depth of 11 feet, at low water, along its channel face.

The amount voted for expenditure during 1908-9, viz., \$2,500, was intended for the renewal of close-piling and fenders, with creosoted timber, and for renewal of all top work, consisting of floor stringers, covering and cap timbers.

Up to the end of the fiscal year, out of the amount voted, the sum of \$150.06 was expended in procuring a portion of the native timber required for the renewal of the top of the work.

BLUE ROCK.

Blue Rock, Antigonish county, is situated on the southern coast of St. George's bay, about 2½ miles to the eastward of the entrance into Tracadie harbour, and 6 miles to the westward of the northern entrance into the Strait of Canso.

9-10 EDWARD VII., A. 1910

During the fiscal year 1908-9, the sum of \$413.11 was expended in renewing the covering of 50 feet of the breakwater; in replacing corner fenders, and in placing stone in the talus on the seaward side.

The work was commenced October 12, and completed October 31.

BLUFF HEAD.

Bluff Head, Yarmouth county, is a small fishing and farming settlement of a couple of hundred people, situated on the coast of the mouth of the Bay of Fundy, about 5 miles from Yarmouth and about midway between Cheggogin point on the south and Sandford on the north, or about one and a half miles from each.

In 1908-9, the sum of \$2,005.47 was expended in constructing a small breakwater for the protection of the fishing fleet. The work is 130 feet long, 20 feet wide and from 4 to 9 feet high, substantially built of round log cribwork, filled with ballast and protected with a break, 4 feet high, on the seaward face.

The work was begun September 13, 1908, and suspended November 25, 1908.

Spring tides rise about 18 feet.

BRETON COVE.

Breton Cove, Victoria county, is on the northeastern shore of the island of Cape Breton, about midway between St. Anne's harbour and South Ingonish bay.

During 1904-5, a wharf was constructed to serve the purposes of a boat landing and to afford shelter for fishing boats. It is a continuous cribwork structure, with creosoted substructure, extending to 4 feet at low water, 195 feet in length and 16 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet.

The gravel and shingle, composing the beach to the northeastward of the rock, was making up along its eastern face and threatened to go around its outer end. On October 28, 1907, a contract was entered into, in the sum of \$5,788, for the extension of the work. The work was commenced on June 8, 1908, and was completed in the early part of the month of August.

The extension is 120 feet long and 18 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet, and consists of round timber cribwork, creosoted to half tide.

Total expenditure for fiscal year 1908-9, amounted to \$5,890.50.

CANADA CREEK.

Canada Creek, Kings county, also called Black Rock, is a fishing and farming village of about 150 people on the south shore of the Bay of Fundy, 60 miles east of Digby gut, and 8 miles west of Halls harbour.

The harbour is formed by two piers or breakwaters, built one on either side of a small stream. That on the east, which is detached from the shore, serves merely as a breakwater and was built by the department in 1878-9 at a cost of \$3,000. It is 150 feet long, 25 feet wide on top and from 12 to 15 feet high, substantially built of round-log cribwork, close faced, well ballasted and fendered.

The breakwater on the western side, originally 248 feet long, which serves both as a breakwater and landing pier, was built before confederation at the joint expense of the inhabitants and the provincial government. It is built of round-log cribwork, the seaward side being protected by close-sheathing and of flatted spars.

In 1908-9, the sum of \$626.66 was expended, in petty repairs to the shoreward end of the work and in the purchase of materials for the extension of the breakwater. The repairs were begun September 1, and completed December 15, 1908.

The work was transferred to the control of the Department of Marine and Fisheries on June 12, 1888.

SESSIONAL PAPER No. 19

CANNING.

Canning, Kings county, is a prosperous village of about 1,500 people, mostly engaged in farming and fruit raising; it is situated on the north or left bank of the Habitant river, which, about $2\frac{1}{2}$ miles below, debouches into the Basin of Minas. It is an important station on the Kingsport branch of the Dominion Atlantic Railway, which connects with the main line at Kentville, 11 miles to the south.

In 1905-6, the sum of \$14,137.08 was expended in the construction of a wharf; it consists of a piece of cribwork 260 feet long, with an 'L' or return 90 feet long. The main block is 15 feet wide on top with an average height of 22 feet, the 'L' is 12 feet wide on top and 18 feet high. The back batters 3 inches to 1 foot and the front 1 inch to the foot. The whole is founded on piles, driven to rock and cut off level with the mud.

In 1906-7, the sum of \$8,640.59 was expended in continuing the work.

In 1907-8, the sum of \$3,996.55 was expended in completing the wharf and filling in behind, and in building a trestle approach to the wharf, 240 feet long by 20 feet high.

In 1908-9, the sum of \$2,763.17 was expended in building the trestle-work approach to the public wharf and in the purchase of materials for the extension of the wharf down stream.

The work was begun February 1, and suspended March 3, 1909.

Spring tides rise over 40 feet.

CAPE AUGET.

Cape Auger, Richmond county, is the southern promontory of Madame island, which separates the harbour of Arichat from Petit de Grat inlet, and forms the south-eastern side of Arichat harbour.

During the fiscal year 1908-9, the sum of \$99.87 was expended in completing the work commenced during the previous year. The work performed included the placing of the floor-stringers, covering, cap timbers and a few fenders.

Work was commenced November 2, and completed November 20.

CAPE NORTH.

Cape North, Victoria county, is a large district at the head of Aspy bay, on the northeastern coast of Cape Breton island. At the head of the bay, there are three extensive sheets of water, known as the north, middle and south Aspy Bay harbours, inclosed by a beach of sand $4\frac{1}{2}$ miles in length. The entrance to these harbours are shoal and intricate, the best being that of the north harbour.

Plan and specification for a block and span wharf at Sugar Loaf, 110 feet long and 16 feet wide with an 'L' on the eastern side of the outer end, were prepared. During the winter, the materials were all arranged for, but as the whole could not be delivered in time, the work could not be completed, and out of the amount voted, viz.: \$1,000, the sum of \$583.15 only could be expended by the end of the fiscal year. The work still required consists in partial ballasting and in placing the covering and cap.

The work of construction was commenced on February 23, and suspended on March 31.

CAPE ST. MARY.

Cape St. Mary, or Cape Cove, Digby county, is situated on the east coast of the mouth of the Bay of Fundy, near the entrance to St. Mary's bay. It is 19 miles north of Yarmouth and 27 miles south of Weymouth. It has a population of about 150 people, engaged chiefly in fishing, and is one of the best fishing stations on the coast of St. Mary's bay; cod, haddock and herring being caught in great abundance.

On the 23rd of November, 1907, a contract was awarded, in the sum of \$9,735, for an extension to the breakwater. The work was begun in July, and completed

9-10 EDWARD VII., A. 1910

on December 31, 1908. The extension is 140 feet long, 30 feet wide and from 24 to 26 feet high, substantially built of round-log cribwork and sheathed all round up to 8 feet, above L.W.O.S.T., with 4-inch creosoted plank as a protection against the ravages of the limnoria.

During the last fiscal year the amount expended was \$9,502.50.

CARIBOO ISLAND.

Cariboo island, Pictou county, is in the Northumberland strait, 5 miles to the westward of the entrance to Pictou harbour.

A cause-way of brush and stone, 1,330 feet in length, between the western extremity of the island and the mainland (on flats dry at extreme low water) commenced in 1890-1, was, after the completion of work undertaken in 1904-5, up to the level of about 1 foot above extreme high, or 7 feet above extreme low water.

The work performed in 1904-5 consisted in repairing the stone talus on the seaward side, constructing a stone wall on the inner side from the bottom up, constructing a stone wall, two tiers in height, on top of the work on the seaward side, and repairing the roadway.

During a very heavy gale in the autumn of 1906, the top of the causeway was carried away down to about 6 inches below extreme high water and the stones forming the wall on the seaward side were scattered over the work, leaving it impassable for teams at high water and nearly so at any time of tide. Subsequently, the middle third of the work was carried away down to about 2 feet below extreme high water.

During the fiscal year 1908-9, \$5,118.99 was expended in nearly completing the raising of the causeway and talus to a proposed height of 3 feet above extreme high water, over a distance of 700 feet from the mainland.

In raising the causeway to about 2 feet above high water from a point 700 feet from the mainland to the island, and in driving the piles in a proposed pile and brush work, 555 feet in length (in bents 5 feet apart, centre to centre, with three piles in each), to protect the middle third of the causeway.

Work was commenced August 17, and suspended November 25.

CHEGGOGIN POINT.

Cheggogin Point, Yarmouth county, is a small farming and fishing settlement, situated on the east coast of the mouth of the Bay of Fundy, about 4 miles northwest from Yarmouth.

In 1908-9, the department expended the sum of \$998.76 in constructing a small breakwater for the protection of the fishing fleet. The work consists of a piece of substantial cribwork, 70 feet long, 20 feet wide and from 5 to 12 feet high.

The work was begun October 3, and completed November 23, 1908.

Spring tides rise about 12 feet.

CHESTER.

Chester, Lunenburg county, is a village of about 1,000 people, engaged in fishing, farming and general trade, situated at the head of Mahone bay, 45 miles southwest from Halifax. During the summer season, a steamer, plying between Halifax and Lunenburg, makes weekly calls. It is a place of some importance, owing to its fine situation and beautiful scenery. It is well known and frequented as a summer resort.

In 1908-9, the department expended the sum of \$113.80 in re-opening the channel through the isthmus joining the mainland and Peninsular point, which had filled in since it was last dug out in 1901. The work was begun September 8, and finished December 2, 1908.

Spring tides rise 6 feet, neaps 5 feet.

SESSIONAL PAPER No. 19

CHETICAMP WHARF.

Cheticamp, Inverness county, on the west coast of Cape Breton island, 18 miles north of Margaree, is a secure harbour, being sheltered from the west and south by Cheticamp island and a connecting beach. The entrance is from the north through a dredged channel.

During the fiscal year 1908-9, the sum of \$432.70 was expended in renewing the covering of the extension and in general repairs.

Work was commenced October 2, and completed October 31.

CHEVERIE.

Cheverie, Hants county, with a population of about 350, is situated on the right or east bank of the River Avon, where it debouches into the Basin of Minas, some 15 miles north of Windsor, the county town. It is a good farming district, but the principal trade of the place is the quarrying and shipping of gypsum to the United States.

In 1908-9, the sum of \$3,029.83 was expended in extensive renewals and repairs to the wharf length of 80 feet on the outer end, which was much decayed, was taken down to a depth of from 6 to 8 feet, and rebuilt. On the shore end, a re-enforcing block, 60 feet long, 10 feet wide and about 3 feet high, was built to protect the old work. The whole of the planking, including most of the stringers, was renewed.

The work was begun on October 2, and completed December 2, 1908.

CHURCH POINT.

Church Point, Digby county, is situated on the southeast side of St. Mary's bay, 6 miles southwest of Weymouth. It has a population of 200 people, engaged in farming and fishing.

The works, which consist of a wharf, a retaining wall and a breakwater, appear to have been built between the years 1855 and 1866, at the joint expense of the inhabitants and the provincial government.

In 1875-6, the department expended the sum of \$2,000, the inhabitants contributing an equal amount, in repairing the northern face, and in building an 'L,' 72 feet long by 20 wide, at right angles to it, with the object of preventing gravel from working around the outer end. The movement of the gravel, which is from south to north, has always been more or less of a difficulty and a detriment to the port.

Since 1890-1, the department has expended various sums in repairing, improving, &c., the work, of which full details are contained in the annual report for 1906-7.

In 1907-8, the sum of \$1,099.36 was expended in completing to full height a portion of the re-enforcing block on the north side of the breakwater, 93 feet long and 13 feet wide.

In 1908-9, the sum of \$2,400 was expended in extensive repairs and renewals. The work was begun August 21, and suspended October 29, 1908.

CLARK'S HARBOUR.

Clark's Harbour is a town of about 1,400 people, situated on the southern side of Cape island, which is the most southern point of the province of Nova Scotia. For a number of years the shore had gradually become denuded, through the action of the ocean, and the people in that vicinity requested the construction of protection works.

During the last fiscal year, the work was undertaken; it was commenced on August 24, and was closed down on October 24, 1908.

About 3,300 feet in length of shore has been protected by a work, 8 feet wide on top, averaging about 7 feet in height, also two culverts, each 40 feet in length, with

9-10 EDWARD VII., A. 1910

box openings, 3 by 4 feet, constructed of good suitable stone with cement paving. About 600 feet in length still require protection.

Spring tides rise 12 feet; neaps, 9 feet.

Total expenditure during last fiscal year, \$4,495.92.

COW BAY (PORT MORIEN).

Cow Bay (Port Morien), Cape Breton county, is on the eastern coast of Cape Breton island, about 18 miles to the eastward of the entrance to Sydney harbour.

During the fiscal year 1908-9, the sum of \$8,150.37 was expended in continuing the placing of concrete blocks against the seaward face of the breakwater, in progress in 1906-7 and 1907-8; in placing concrete in four 6-foot by 8-foot chambers, in outer face-work, at its junction with the inner counterfort, and in two 8-foot by 8-foot chambers, in the cribwork, at the junction of the outer face with the beach; in repairs to the covering of the breakwater; in shingling and repairing the warehouse, and in constructing a shed, for storing sand at the back of the warehouse.

Sixteen concrete blocks were placed on the seaward side of the breakwater, twelve having a combined length of $128\frac{1}{2}$ feet, in the space left last year between the inner and centre counterforts, and four having a combined length of $42\frac{1}{2}$ feet, against the outer face, at its junction with what remained of the central counterfort. The blocks completing the space between the inner and central counterforts are 12 feet in height, $6\frac{1}{2}$ feet in width at top, 7 feet above extreme low water, and 11 feet in width from one foot above extreme low water to the bottom. The blocks at the junction with the central counterfort are 16 feet in height, $3\frac{1}{2}$ feet in width at top, 11 feet above extreme low water, and 11 feet in width, from one foot above extreme low water to the bottom.

The top of the covering of the breakwater, on the seaward side, is about 13 feet above extreme low, or 7 feet above extreme high water.

Operations were commenced September 1, and suspended January 18.

COW BAY RUN.

Cow Bay Run, Halifax county, is situated on the east side of the mouth of Halifax harbour, on the Atlantic coast, about 2 miles east of Devil's island. It is a broad bay, formed by a narrow strip of beach, about a mile in length, separating the Atlantic from a fresh-water lake, having an area of $1\frac{1}{4}$ square miles.

In 1904-5, the sum of \$5,000 was expended in constructing a breakwater for which timber was delivered in 1903-4. The work, which is substantially built of stone-filled cribwork, is 200 feet long; the shoreward half length being 10 feet wide and from 6 to 10 feet high. At the end of the fiscal year the work still lacked fenders and covering.

In 1905-6, the department expended the sum of \$500 in completing the breakwater. The work done consists in placing fenders for the whole length of the work, and in raising its outer portion and in planking for the whole length.

In 1908-9, the department expended the sum of \$2,350.24 in extending the breakwater constructed in 1904 and 1905, by a new block of substantial cribwork, 50 feet long, 20 feet wide and from 13 to 15 feet high.

The work was begun on October 10, 1908, and completed March 23, 1909.

Spring tides rise 6 feet.

CRIBBIN'S POINT.

Cribbin's Point, Antigonish county, is on the west side of St. George's bay, 8 miles to the southward of Cape George, and 5 miles to the northward of the entrance to Antigonish harbour. For details of construction see report for 1908.

SESSIONAL PAPER No. 19

Out of the amount voted for 1908-9, for repairs and for the reconstruction of the top of the outer end of the old original work, viz.: \$3,800, up to March 31, 1909, the sum of \$1,635.48 was expended as follows:—

In repairing the road approach, in re-ballasting and renewing part of the covering along seaward face of work, and in other repairs.

In procuring the native timber, iron and ballast required for the reconstruction of the top of the outer end of the old work, for a distance of 80 feet.

Repairs were commenced on September 21, and completed October 19, 1908, and the materials for reconstruction of top were obtained, from February 9 to March 12, 1909.

CULLODEN.

Culloden, Digby county, is a farming and fishing settlement of about 150 people, situated on the coast of the Bay of Fundy, 6 miles northwest from the town of Digby, and 3 miles southwest from Digby gut.

In 1907-8, the department, in order to provide some protection to the fishing fleet, built a breakwater on the west side of Broad cove. The work, which was done by contract, is 120 feet long, 30 feet wide and from 16 to 28 feet high. At the outer end of the work, which is just at low water mark, there is a depth, at high tide, of about 24 feet of water. The shore end of the work is rock bank, 100 feet long, 30 feet wide and from 2 to 15 feet high. The outer half length of the breakwater is sheathed with 4-inch creosoted plank from the bottom to the level of half tide.

In 1908-9, the sum of \$438.30 was expended in constructing a block of cribwork 25 feet long, 20 feet wide, and 10 feet high, to fill a gap between the side of the shore end of the breakwater and the cliff into which the sea beat with such force as to destroy the stone approach to the breakwater.

The work was begun on November 2, and finished November 17, 1908.

DAVID'S COVE.

David's cove, Digby county, is a slight indentation in the general coast line of St. Mary's bay, half a mile north of Salmon river. The whole district is thickly settled with a thrifty and industrious population, dependent for their livelihood on fishing and farming.

In 1908-9, to protect the fishing fleet, the department expended the sum of \$2,497.90 in constructing a breakwater. The work, which is substantially built of cribwork, is 110 feet long, 25 feet wide and from 6 to 14 feet high.

The work was begun September 14, and completed November 26, 1908. Spring tides rise about 17 feet.

DEEP BROOK.

Deep Brook, Annapolis county, is the name of a thickly populated, agricultural district, about 6 miles below Annapolis, on the south shore of the Annapolis basin.

In 1908-9, the sum of \$1,193.73 was expended in the purchase of materials for the construction of a public wharf of pilework, for the convenience of local trade.

DELA'S COVE.

Delaps cove, Annapolis county, is situated on the south shore of the Bay of Fundy, 12 miles to the eastward of Digby gut.

The breakwater is constructed on the eastern side of the mouth of a small tidal pond which affords safe shelter for fishing boats and a convenient place for keeping schooners and other small craft during the winter. The breakwater affords a good landing place for coasting vessels and good shelter from easterly storms. The shore,

9-10 EDWARD VII., A. 1910

on the opposite side of the stream, protects the breakwater and the pond from westerly storms.

The breakwater, which is now 185 feet long, 25 to 28 feet wide and from 12 to 21 feet high, was built by the department in 1878-9. Since its construction, frequent expenditures have been made in repairs and renewals, of which full particulars are given in the departmental report of 1906-7.

In 1908-9, the sum of \$2,137.33 was expended in rebuilding a length of 80 feet of the middle of the breakwater, that was destroyed by a violent storm the winter before.

The work was begun on September 21, 1908, and suspended on March 31, 1909.

DIGBY.

Digby, Digby county, the shire town of the county, with a population of about 1,500 people, is beautifully situated on the southwestern end of Annapolis basin. It is an important station on the Dominion Atlantic Railway, 67 miles north of Yarmouth, 150 miles from Halifax, and 20 miles from Annapolis. It is also the port of call for the daily steamer of the Dominion Atlantic Railway plying between Digby and St. John.

The harbour is open at all seasons and well protected from nearly all quarters; storms from the north and northeast drive a heavy sea against the pier, and if, at such times, there be much drift ice in the basin, the structure is likely to suffer damage.

Full details of construction and repairs are contained in the annual report for 1906-7.

In 1907-8, the sum of \$1,363.85 was expended in miscellaneous repairs and renewals and \$650 in the purchase of Georgia pine for further extensive renewals.

In 1908-9, a large sum was expended in continuing the repairs and renewals to the pier. Of this sum \$1,798.53 was expended in the purchase of Georgia pine, and a further sum of \$14,913 out of the special appropriation for creosoted timber.

The repairs and renewals were begun August 3, 1908, and suspended March 3, 1909.

On May 22, 1908, the department awarded a contract for the construction of a spur-pier, in the sum of \$17,900. This spur, which will be 350 feet long, 50 feet wide and from 30 to 35 feet high, constructed of creosoted piles, with Georgia pine stringers and caps, projects from the southern side of the middle length of the pier, at an angle of 45 degrees. Its object is to provide a berth for the daily steamer and for other vessels using the pier, while the main structure is undergoing thorough restoration.

The work was commenced in August, and suspended for the season at the end of November, 1908.

Total expenditure during last fiscal year, \$49,776.99.

DILIGENT RIVER.

During the last fiscal year, the sum of \$367.77 was expended in removing Gore rock, which was a menace to navigation. About 225 tons of stone were removed.

Work was begun here July 3, and continued until July 21, 1908.

EAST DOVER.

East Dover, Halifax county, is a small fishing village situated at the mouth of St. Margaret's bay, about 15 miles southwest of the city of Halifax. The population comprises about 100 people, almost exclusively dependent upon the fisheries.

SESSIONAL PAPER No. 19

In 1908-9, the sum of \$198.94 was expended in the construction of a road approach from the main road to the wharf.

Work was begun December 8, 1908, and suspended, though not quite completed, January 23, 1909.

EASTERN PASSAGE.

Eastern Passage, Halifax county, is an important fishing village of some 300 or 400 people, situated on the eastern side of Halifax harbour, 5 miles below the city.

A small brook which empties into a cove at this place, used formerly to keep the channel open for boats, but of late years, the beach which protected the cove has been gradually moving shoreward, until protection works became indispensable.

In 1908-9, the sum of \$4,979.61 was expended in constructing a breakwater for the further protection of the harbour. The work is 350 feet long, of which 200 feet is 10 feet wide and 150 feet is 15 feet wide. The work is from 5 to 18 feet high, substantially built of round log cribwork. Some 1,000 feet in length of brush fence was also constructed to check the driving of the sand.

Work was begun October 22, 1908, and not quite completed on March 31, 1909.

EAST HARRIGAN.

East Harrigan, Halifax county, is a fishing and mining settlement of about 200 people, situated 9 miles east of Salmon river, or about 65 miles in an air line east of Halifax.

In 1908-9, the sum of \$800 was expended in the construction of a road approach from the main road to the wharf.

The work was begun December 8, 1908, and suspended, though not quite completed, on January 23, 1909.

EAST JEDDORE.

East Jeddore, Halifax county, is a settlement of about 600 people, scattered along the eastern side of Jeddore harbour, about 30 miles east of Halifax, and 10 miles west of Ship Harbour. The inhabitants are chiefly engaged in fishing, the fleet comprising ten schooners and a number of small boats. The harbour is an excellent one with a good shelter and easy approach, the channel being from 20 to 40 feet deep, and from 800 to 1,000 feet wide.

In 1908-9, a second block of cribwork was built for the protection of the wharf, 22 feet long, 20 feet wide, and 12 to 15 feet high. A small freight shed 22 by 15 feet was also constructed for the use and convenience of local shippers.

The work was begun October 1, and completed October 25, 1908.

Total amount expended, \$946.26.

EAST LAWRENCETOWN.

East Lawrencetown, Halifax county, also called Conrod's Cove, is situated on the Atlantic coast, about 12 miles west of Halifax.

For the protection of the public road, which was being gradually worn away by the sea, the department in 1908-9 expended the sum of \$1,198.23 in building a piece of cribwork 300 feet long, 8 feet wide and from 5 to 7 feet high.

The work was begun September 28, and completed November, 1908.

EAST PORT LE HEBERT.

East Port Le Hebert is a village about 15 to 17 miles east of Liverpool, with a population of about 150. All those people are engaged in fishing, their principal income being derived from the lobster fishery.

9-10 EDWARD VII., A. 1910

During the last fiscal year, protection works were constructed, operations beginning October 1, 1908, and closing October 31, of the same year.

The work consists of two piers, so situated that boats requiring shelter and protection from the drift ice can bring their lobsters and moor the crates between the piers in absolute safety. These piers are each 80 feet in length, 14 feet wide and 18 feet high, separated from each other a distance of 60 feet, and are located on the edge of the channel, in about 8 feet of water, at L.W.O.S.T. They are constructed of solid cribwork; this year, one was completed, and the other about two-thirds built.

Spring tides here rise 6 feet; neaps, 4 feet.

EAST RIVER.

During the months of October and part of November, 1908, an examination and survey were made with a view of making a channel up the East river from Pictou to New Glasgow.

EATONVILLE.

Eatonville is a small settlement where extensive lumbering interests have been carried on for the last twenty-five or thirty years. It is situated about 12 miles west of the town of Advocate.

During the last fiscal year, the sum of \$4,500 was granted for the construction of a breakwater on the opposite side of the harbour, so that the entrance could be protected on both sides.

This breakwater has been completed, at a cost of \$4,494.22; it runs from the cliff, seaward, a distance of about 187 feet; it is 14 feet wide on top, with a batter of two inches to the foot on the outside, and one inch to the foot on the inside, is 11 feet high at the cliff, and 29 feet high at its outer end. It is built of continuous, round log, ballast-filled cribwork, double fendered on both sides and sheathed with 7-inch logs, along its outside face and end. The foundation logs all rest upon a solid rock reef, to which they are bolted, the rock being levelled off to a suitable foundation.

Spring tides here rise 37 feet; neaps, 31 feet.

Work was begun here August 24, and completed November 26, 1908.

ENGLISHTOWN.

Englishtown, Victoria county, is on the southern shore of and immediately within the entrance to St. Ann's harbour, a fine basin, 7 miles in length, about 2 miles in width, and carrying a depth of about 50 feet, at the head of St. Ann's bay on the northeast coast of the island of Cape Breton.

The harbour is formed by a long narrow beach which extends from the northern to within 180 yards of the southern side. The beach is about a mile and a half in length, and is used as a highway from the northern section of Victoria county to the ferry, which plies between its southern end and Englishtown, on the southern side of the entrance.

The sum of \$199.83 was expended, during the year ended March 31, 1909, in extending the old ferry wharf, a distance of 10 feet, and in the construction of a new block 40 feet long and 10 feet wide, on the western side of the old wharf, and 20 feet therefrom, to form a small dock for the protection of the ferry scow during westerly gales.

The work was commenced on November 9, and completed on November 27, 1908.

FOX ISLAND.

Fox Island, Halifax county, is situated on the Atlantic coast of Nova Scotia, about 13 miles east of Halifax and is about 900 feet from the mainland. It is a very small island, being only some three or four acres in extent, and no point on it is more

SESSIONAL PAPER No. 19

than 6 feet above H.W.O.S.T. It has no permanent inhabitants, but during the summer season is used by a number of fishermen as a fishing station.

In 1908-9, the sum of \$1,052.62 was expended in repairing the breach made by the sea under the west side of the beach protection. The work, for a distance of 100 feet, was under-pinned and close-sheathed from the top to a depth of about three feet below the bottom, to prevent further scouring.

The work was begun December 21, and completed December 30.

Spring tides rise 6 feet; neaps, 5 feet.

FREEPORT.

Freeport, Digby county, is situated on the southern end of Long island, on the east side of Grand Passage, 40 miles southeast of Digby Gut and 26 miles southwest from Trout Cove. The population consists of about 700 people, engaged chiefly in fishing and farming. It is a port of call for subsidized steamers plying between Yarmouth, N.S., and St. John, N.B.

In 1908-9, the sum of \$443.92 was expended in the construction of a concrete wall, on the seaward side of the shore end of the breakwater, for the purpose of preventing the sea from washing away the stone approach. The piece of concrete is 25 feet long, from 6 to 9 feet high and from $1\frac{1}{2}$ to $3\frac{1}{2}$ feet thick. Some miscellaneous repairs were also made to the breakwater. The work was begun June 27, and completed October 5, 1908.

Spring tides rise about 21 feet.

GEORGEVILLE.

Georgeville, Antigonish county, is on the southern shore of Northumberland strait, $6\frac{1}{2}$ miles southwest from Cape George.

During the fiscal year 1908-9, the sum of \$1,499.28 was expended in close-sheathing a portion of the inside face and the face of the old 'L' in renewing the covering and in reballasting, where necessary, and in procuring the balance of the materials required for the construction of the triangular block to be placed in the angle formed between the old 'L' and the extension.

The work was commenced on October 1, 1908, and continued to March 31, 1909.

GLACE BAY BEACH.

Glace Bay Beach, Cape Breton county, is on the northern coast of Cape Breton island, between Glace Bay and Port Morien.

A contract entered into on April 23, 1908, for the construction of a work to protect the public road crossing the beach at the head of Big Glace bay and separating the bay from Big Glace Bay lake, was completed on December 3. The protection work is 4,000 feet in length, of piles and brush. Piles were driven 4 feet apart, centre to centre, transversely, and 5 feet apart, centre to centre, longitudinally, in a trench excavated to 2 feet below the level of high water. The space, longitudinally, between the piles was filled in to a height of 6 feet 6 inches above the level of high water, with small spruce trees, trimmed and closely packed, after which the tops of the piles, in each bent, were connected with $\frac{3}{4}$ -inch tie rods.

The total expenditure during the last fiscal year amounted to \$9,415.72.

GRAND ETANG.

Grand Etang, Inverness county, is on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp. For details of construction of wharf see previous reports.

During the fiscal year 1908-9, the sum of \$10,513.53 was expended in removing the remains of the outer block on the west side; in procuring the creosoted timber

9-10 EDWARD VII., A. 1910

and other materials required, and in reconstructing the west block; in completing the reconstruction of the northeast block, undertaken in 1907-8, and in reconstructing about 80 feet of brush and stone embankment, with talus and covering, on each side.

All the work undertaken in 1907-8 was completed, with the exception of the reconstruction of 50 feet of cribwork adjoining the outer blocks on each side.

Operations were commenced July 8, and suspended January 20, 1909.

GRAND NARROWS.

Grand Narrows is on the southeastern side of the Barra strait, which connects the Great with the Little Bras d'Or lake. It is an important station on the I.C.R. at the southern end of the railway bridge which crosses the strait here, and is also a landing place for steamers, which ply on the lakes.

During 1908-9, the sum of \$35.23 was expended in repairs to the shed, which consisted in the renewal of two rafters, two wall plates, one corner post, five uprights, of some rough boarding, shingles and inside sheathing and in replacing eleven panes of glass in two of the windows.

The work was commenced on September 1, and completed on September 4, 1908.

GRASS COVE.

Grass Cove, Victoria county, is on the western side of the Little Bras d'Or lake, about 2 miles to the northward of Iona, a station on the I.C.R. at the western end of the Grand Narrows Railway bridge.

An amount was voted towards the construction of a wharf extending to 12 feet at low water, to enable the people in the neighbourhood to ship pit timber to the coal mines in eastern Cape Breton.

The proposed work is a block and span structure, with creosoted timber substructure, 164 feet long and 18 feet wide, with an 'L' on the outer end, 18 by 20 feet; it is estimated to cost \$4,700.

Out of the amount voted for 1908-9, towards the construction of the work, viz.: \$1,500, the sum of \$982.66 was expended up to March 31, 1909, in procuring all the native timber, the iron and the ballast required in its construction.

GREEN HARBOUR.

Green Harbour is situated on both sides of a small inlet about 3 miles west of Lockeport. On both sides of this inlet are settlements known respectively as East and West Green Harbour, each settlement containing from 150 to 200 people. The natural market for these people is Lockeport. The department, during the last fiscal year, granted the sum of \$1,300 to construct a small wharf on the eastern side of this inlet, and to cut a channel to said wharf. Work was commenced here August 28, and completed on October 21, 1908.

The landing wharf consists of a rock bank 16 feet wide on top and about 50 feet long; of a span 15 feet long, and a blocking 20 feet square with a height of 11 feet. A channel 350 feet long, 30 feet wide and 3 feet deep, was also cut through the beach.

Spring tides rise 6 feet; neaps, 4½ feet.

GULF SHORE.

Gulf Shore is a scattering settlement, situated about 6 miles from the town of Pugwash, of about 400 people, whose chief occupations are farming and fishing. In order to protect the lobster fishermen, in the pursuit of their trade, the department decided to construct a breakwater, during the last fiscal year; the sum of \$2,409.85 was expended. Work was commenced on September 15, 1908, and continued intermittently until March 25, 1909.

SESSIONAL PAPER No. 19

All the materials were procured and the cribs partially constructed but were not floated out to position, owing to the lateness of the season and the exposed condition of the foreshore.

Spring tides rise here $6\frac{1}{2}$ feet; neaps, 5 feet.

HALLS HARBOUR.

Halls Harbour, Kings county, is situated on the south side of the Bay of Fundy, about 65 miles northeast of Digby Gut and 12 miles southwest of Scott's Bay; it is about 12 miles northwest of Kentville, the county town of Kings, and the headquarters of the Dominion Atlantic Railway.

The harbour, though small, is one of the best at high water, between Scott's Bay and Digby Gut. Spring tides rise 39 feet; neaps, 33.

In 1908-9, the sum of \$7,502.66 was expended in the thorough restoration of the shore end of the main breakwater and of the wharf-wall along the eastern side of the inner harbour, a length of 270 feet, from 10 to 15 feet wide and from 12 to 16 feet high.

Work was begun May 15, 1908, and completed March 15, 1909.

HANTSPORT.

Hantsport, Hants county, has a population of about 1,500 and is situated on the left or west bank of the Avon river, here $1\frac{1}{2}$ miles wide, about half way between Windsor and the mouth of Avon river, where it enters the Basin of Minas. It is an important station on the Dominion Atlantic Railway, 7 miles from Windsor and 53 miles from Halifax.

The wharf, which was built in 1897-8, is constructed of stone-filled cribwork, 200 feet long, 32 feet wide, with an 'L' 32 feet long, on the outer end, giving a face length of 64 feet, where it has a height of 26 feet. At high water there is a depth of 23 feet along the face of the work. At low water the beach is dry.

In 1908-9, the sum of \$498.30 was expended in renewing the whole top of the wharf, including guard-stringers and plank.

The work was begun July 6, and finished August 6, 1908.

HARBOUR AU BOUCHE.

Harbour au Bouche, Antigonish county, on the southern side of St. George's bay, about 3 miles to the westward of the northern entrance to the Strait of Canso, is a small natural harbour, about half a mile in length and width, with a depth of about 14 feet at low water.

During the fiscal year 1908-9, the sum of \$1,113.17 was expended in procuring the creosoted piling, and the balance in procuring all the other materials required, with the exception of covering and iron, for a proposed extension of 22 feet to 11 feet at low water to Crispo's wharf, purchased in 1907.

Total expenditure to March 31, 1909, \$1,132.15.

HARBOURVILLE.

Harbourville, Kings county, is situated on the south shore of the Bay of Fundy, 53 miles northeast of Digby Gut. The population of the settlement is about 200 people, engaged in fishing and farming, the former being the staple industry. The harbour, which is only 400 feet long by 200 wide, and dry at low water, is formed by the mouth of Givans brook, and affords, at high water, a complete shelter from storms from all quarters to vessels drawing up to 14 feet of water.

9-10 EDWARD VII., A. 1910

In 1908-9, the sum of \$385.92 was expended in petty repairs to the shore end of the breakwater, and in the purchase of timber for the extension of the work. Repairs were begun November 3, and completed November 14, 1908.

Spring tides rise about 38 feet.

The work was transferred to the control of the Marine and Fisheries Department on June 12, 1888.

INVERNESS.

Inverness, Inverness county, formerly known as Broad Cove, is an incorporated and growing mining town on the northwestern coast of Cape Breton island, about midway between the harbours of Mabou and Margaree.

The sum of \$10,000 was appropriated for expenditure in 1908-9, towards harbour works at Inverness; re-opening and protecting a channel into McIssac's pond, a small sheet of water with a good depth over a limited area, formerly separated from the Gulf of St. Lawrence by a beach of sand 400 feet in width.

During the fiscal year 1908-9, \$910.96 was expended in procuring nearly all the materials (with the exception of some creosoted piling) required in the reconstruction, with pile, brush and stone work, of 300 feet of old channel protection work on the eastern side of the entrance.

ISAAC'S HARBOUR.

Isaac's Harbour, Guysboro county, is a small but safe harbour on the southern or Atlantic coast of Nova Scotia, 36 miles to the westward of Cape Canso and 16 miles to the eastward of the entrance to St. Mary's river.

The public wharf, on the west side of the harbour, completed in 1901, extends 295 feet to 12 feet at low water. It consists of a stone abutment, 135 feet in length and a block and span extension, 160 feet in length, including three blocks, each 22 by 22 feet, and an outer block, 22 feet in line of work by 48 feet. In 1902-3, a warehouse, 37 by 17 feet, was constructed on the south side and at the inner end of the wharf.

In July, 1908, the sum of \$21.15 was expended in renewing unsound guard rails and covering of the wharf.

JOGGINS MINES.

Joggins Mines is a town of some 1,500 people, situated on the Bay of Fundy, about 10 miles northwest of Amherst town. The department constructed a breakwater at this place some twenty years ago, which has been renewed from time to time, and during the last fiscal year, the sum of \$3,089.91 was expended in effecting further repairs.

Work was commenced on September 8, 1908, and continued until January 8, 1909.

The road on the right hand side, going down, had been blocked, through the caving in of the bank, and, in order to prevent further trouble, we excavated and placed in the excavation, a buttress of cribwork, 6 feet wide, 7 feet high and 120 feet long. We took up the entire top of the breakwater and had to renew from 4 to 6 feet in height of the old work for its entire length.

The ballast, which had been forced out, was replaced; and the entire top ballast floor was renewed.

The outside end and entire outside face of the breakwater was sheathed with 9-inch logs flatted to 7-inch faces, fastenings of which averaged about nine bolts 24 inches long to each log.

Spring tides rise 37 feet; neaps, 30 feet.

JOHNSTON'S HARBOUR.

Johnston's Harbour, Richmond county, is on the southern shore of the Great Bras d'Or lake, about 19 miles to the northward from St. Peter's canal, and 29 miles from the head of East bay.

SESSIONAL PAPER No. 19

A cribwork wharf, commenced by the inhabitants in 1881, was raised by the department during 1883-4, extended by the addition of a native timber pile-head in 1893-4, and the latter was repaired during 1901-2.

An examination made in October, 1906, showed that all the native timber piles were much weakened by the attacks of the teredo, and that several of them had been cut into, so that the wharf was in danger of collapsing.

During 1907-8, the sum of \$49.56 was expended in temporary repairs, and a further sum of \$186.97 was expended in procuring the native timber for the superstructure of the proposed new pile-head.

During the year ended March 31, 1909, the old native timber pile-head was removed, and a new one, 40 feet long and 42 feet wide, supported on creosoted timber piling, was constructed in its place, and out of the amount voted, viz., \$1,100, the sum of \$1,099.44 was expended in completing the work, which was commenced on September 1, and completed on November 7, 1908.

JUDIQUE (BAXTER'S).

Judique (Baxter's), Inverness county, so called to distinguish it from Little Judique and Judique (McKay's Point), is on the western coast of Cape Breton island, near Campbell's Point, which is mid-way between Long Point and McKay's Point, and 4 miles distant from each.

During the fiscal year 1908-9, the sum of \$1,200 was expended in constructing a wharf, extending 176 feet to $1\frac{1}{2}$ feet at extreme low water, the materials for which were procured in 1907-8.

The wharf is a continuous cribwork structure, fully ballasted and protected, at the outer end, on the northern side, and on the southern side for a distance of 24 feet from the outer end, by close sheathing. Spring tides rise $4\frac{1}{2}$ feet.

Construction was commenced July 3, and completed September 29.

JUDIQUE (MCKAY'S POINT).

Judique (McKay's Point), Inverness county, is on the east side of St. George's bay, 10 miles south of Port Hood and 16 miles north of the northern entrance to the Strait of Canso.

The breakwater at McKay's Point, commenced in 1898, and completed in 1900, is 725 feet in length and 20 feet in width, with an 'L' 20 by 20 feet at the outer end, of round timber, laid open-faced with creosoted timber sub-structure, close fendered round the outer end and 'L,' and protected on the seaward side by a talus of stone. The depth at extreme low water, at the outer end is 6 feet. Spring tides rise $4\frac{1}{2}$ feet.

During the fiscal year 1908-9, the sum of \$1,358.99 was expended in cutting down to low water; in re-constructing the outer block, and in placing quarried stone in the talus, on the seaward side over a distance of 100 feet, from the 'L' inwards.

Work was commenced September 1, and completed November 30.

KELLEY'S COVE.

Kelley's Cove, Yarmouth county, lies about $2\frac{1}{2}$ miles south of the present town of Yarmouth. Fifty to one hundred years ago it was the harbour of the place, and around its shores was all that constituted the town. At present it is merely a shelter for about a dozen fishing boats, and there are but a few houses in the immediate vicinity.

In 1908-9, the sum of \$4,299.99 was expended in building an extension to the breakwater, 90 feet long, 26 feet wide and from 14 to 16 feet high.

Work was begun September 15, 1908, and suspended January 5, 1909.

Spring tides rise 12 feet.

9-10 EDWARD VII., A. 1910

KENNINGTON COVE.

Kennington Cove, Cape Breton county, is on the north shore of Gabarus bay, 3 miles west from White Point, a low rocky point at the entrance to the bay, 2 miles southwest from the entrance to Louisburg harbour.

During the fiscal year 1908-9, the sum of \$500.32 was expended in improving a landing place for boats, by removing boulders over an area 200 feet in length by 100 feet in width.

Work was commenced September 21, and completed November 21.

KETCH HARBOUR.

Ketch Harbour, Halifax county, is a small fishing settlement of about 150 people, situated on the Atlantic coast, about 16 miles west of Halifax.

There is a snug boat harbour, but, owing to lack of protection, fishing boats and stages were frequently damaged by heavy seas. To afford some protection and shelter, the department, in 1908-9, expended the sum of \$2,001.33 in constructing a break-water. The work, which is substantially built of round-log cribwork, is 100 feet long, 20 feet wide, and from 5 to 20 feet high.

Work was begun September 3, and completed October 14, 1908.

LA HAVE ISLANDS.

La Have Islands, Crooked channel, off the coast of the southern part of Lunenburg county, opposite and to the southward of the mouth of La Have river, are from thirty to forty islands, varying in size from a few square yards to about a square mile. Most of the larger islands are inhabited, their aggregate population being some 200 or 300, engaged in fishing and farming. The islands are distant from the mainland from $1\frac{1}{2}$ to 3 miles, and they are all more or less connected with each other and to the mainland by shallow banks or mud flats, covered at H.W.O.S.T., but bare, or nearly so, at low water. In and about the flats are numerous channels and deep holes, but boat navigation is intricate and, in many cases, very circuitous.

The principal channel through the archipelago lies approximately east and west, and is appropriately known by the name of 'Crooked Channel,' its landward end being in Green bay, to the southward and of Petite Rivière beach, a long, narrow strip or bar of sand projecting about a mile and a quarter from the main shore. it gave no direct access to the village of West Dublin, lying about 2 miles to the northward.

To give the inhabitants of the larger islands, viz.: Bushe's and Bell's, more direct communication with the mainland, the department, in 1893, dug a boat channel, 2,300 feet long, 40 feet wide and 3 to 4 feet deep, at L.W.O.S.T. in a northerly direction from the main channel to the south, to deep water on the north, between the extremity of Petite Rivière beach and Bushe's island. The work was all done by hand, at low water, at a cost of \$923.73.

In 1906-7, the sum of \$1,097 was expended in re-opening 1,100 feet of this channel from 18 to 20 feet wide and 3 to 4 feet deep, which had filled up in the thirteen years since it was first dug.

In 1908-9, the sum of \$500 was expended in digging, by hand, a boat channel between Bell's island and Bushe's island and the mainland. The work was begun November 18, and completed November 24, 1908.

L'ARDOISE.

L'Ardoise, Richmond county, is situated on the eastern side of St. Peter's bay, near its entrance from the Atlantic ocean, and about 9 miles to the eastward of the southern entrance to St. Peter's canal.

SESSIONAL PAPER No. 19

An isolated breakwater, built in 1876-77, and almost destroyed in 1883, was re-constructed during 1891-2-3. It is 400 feet long and 20 feet wide on top, and consists of a timber core, placed over the remains of the original work, the whole being covered with stone, sloping three to one on the seaward face and outer end, and two to one on the inner side and inner end. The whole surface of the work, above low water mark, was covered with stone of not less than 15 cubic feet each, and the spaces between the stones, above the line of high water, were filled in with concrete.

Since the completion of the work, a concrete wall, 3 feet wide on top and $4\frac{1}{2}$ feet in height, with top flush with the surface of the covering, has been constructed over the outer face and ends of the cribwork core.

In order to stop the undertow from sweeping into the harbour, through the gap between the inner end of the breakwater and the shore to the eastward of it, a distance of 1,195 feet, during 1903-4-5, a round timber structure, 1,145 feet in length, and a stone embankment, 50 feet long on top, were placed, filling in the gap completely.

Since 1900, slight disturbances of the stone covering of the breakwater had taken place yearly, until in the winter of 1904-5, when, during a furious gale, the heavy seas threw large masses of ice onto and against the structure and, dislodging the stone covering, cut several gaps through the top.

The sum of \$491.49 was expended during 1905-6; in closing up, temporarily, the most dangerous gaps in the top of the work.

The sum of \$5,000 was voted in 1906-7 to place the work in thorough repair, but owing to the shortness of the season, and the exposed position of the work, out of the amount voted, the sum of \$3,265.21 only could be expended during that year; the work was left in a safe condition.

During 1907-8, the sum of \$993.51 was expended in continuing the work commenced during 1906-7, and during the year ended March 31, 1909, the work was finally completed, at a cost of \$978.17.

The surface stone, down to low water, has been replaced, where necessary, and was carefully laid and packed as close together as possible; above the line of high water it has been laid in, and all the spaces between them filled in with cement concrete; and at the outer end, a concrete retaining wall 12 feet wide, 40 feet long, and of an average height of 7 feet, has been placed.

The work was commenced on September 9, and was completed on November 16, 1908.

LITTLE BARACHOIS.

Little Barachois, Richmond county, is a harbour for boats on the western side of Madam island, about 3 miles from the town of Arichat.

During the fiscal year 1908-9, the sum of \$495 was expended in improving the entrance to the harbour, by excavating to 2 feet, at low water, in a channel, 300 feet in length and 40 feet in width.

Work was commenced September 23, and completed October 19.

LITTLE BROOK.

Little Brook, Digby county, is situated on the thickly settled eastern shore of St. Mary's bay, Bay of Fundy, $2\frac{1}{2}$ miles from Church Point, 33 miles south from Digby, and 36 miles north of Yarmouth.

In 1908-9, the sum of \$100.04 was expended in building a small block of cribwork, about 40 feet long, at the shore end of the breakwater, which had been partially broken down in a severe storm. The work was begun October 12, and completed October 20, 1908.

9-10 EDWARD VII., A. 1910

LITTLE HARBOUR.

Little Harbour, Pictou county, is on the Northumberland strait, about 5 miles east of the entrance to Pictou harbour.

Of the \$3,400 appropriated for expenditure in 1907-8, in the construction of a wharf near the head of Little harbour, the sum of \$1,545.89 was expended in procuring about three-quarters of the materials required in the construction of a block and span wharf.

During the fiscal year 1908-9, the sum of \$2,932.02 was expended in procuring the balance of materials required: in constructing a wharf, extending 297 feet to 2 feet at low water, and in placing stone around some of the inner blocks to prevent scour.

Work of construction was commenced August 3, and completed October 31.

The work of placing stone around the inner blocks was performed March 1 to 15.

LITTLE NARROWS (NORTH).

Little Narrows, North, Inverness county, is on the north side of Little Narrows, a contraction of St. Patrick's channel, an arm of the Great Bras d'Or lake, at a point about 7 miles to the eastward of Wyeocomagh and 15 miles to the westward of the town of Baddeck.

Out of the amount voted towards the construction of a wharf, viz., \$1,000, up to March 31, 1909, the sum of \$140.38 was expended in procuring the native timber required for the top of the wharf.

LITTLE RIVER HARBOUR.

Little River Harbour, Yarmouth county, is a small farming and fishing settlement of about 200 people, 12 miles southeast of Yarmouth.

In 1908-9, the sum of \$2,000 was expended in the construction of a public wharf. The work is 150 feet long, 20 feet wide and from 6 to 15 feet high.

The work was begun September 1, and suspended November 23, 1908, at which date it was completed, except the stone approach.

LIVINGSTON'S COVE.

Livingston's Cove, Antigonish county, is on the southeastern shore of Northumberland strait, about 2 miles southwest from Cape George.

During the fiscal year ended March 31, 1909, the sum of \$444.99 was expended in re-bolting fender piles at outer corners of breakwater, in raising the talus on its seaward side by placing 275 cubic yards of quarried stone thereon, and in obtaining 50 yards of stone for future use. Spring tides rise $4\frac{1}{2}$ feet.

Work was commenced on October 16, and completed October 24, 1908.

LOWER JORDAN BAY.

Lower Jordan Bay is a scattered village of about 300 people, situated 5 miles southeast of Shelburne town, and on the western side of Jordan bay. Its people are largely engaged in fishing, and have been handicapped through not being able to get into their harbour except at the top of the tide. The department, during the last fiscal year, appropriated the sum of \$3,000 to open up a channel through the bar, so that the harbour would be accessible at all times of tide.

The work was begun on September 12, and ceased September 30, 1908; it consisted in opening a channel, 30 feet wide, 4 feet deep, for the entire width of the bar. Amount of expenditure: \$2,351.94.

SESSIONAL PAPER No. 19

LOWER WOODS HARBOUR.

This work is also known as 'Clearing Channel at Cockawit Pass.' This pass is used by vessels coasting along the southern shore of Nova Scotia, and is a very important thoroughfare for that class of navigation. The only difficulty, in navigating this pass, was the presence in it of a number of large boulders, over which there was, at low tides, only about $7\frac{1}{2}$ or 8 feet of water.

The work done during the last fiscal year consisted in the removal of these obstructions.

Tides rise 12 feet; neaps, $8\frac{1}{2}$ feet.

Work was commenced August 28, and completed October 15, 1908.

MABOU HARBOUR.

Mabou Harbour, Inverness county, is on the west side of Cape Breton island, 6 miles northeast from Port Hood.

The entrance was formerly at the southern extremity of a range of sand hills and by an intricate channel obstructed by a bar, over which there was a depth of only 4 feet at extreme low water.

The opening of a new channel through the sand hills, at their northern extremity, was undertaken in 1872. A pier, 835 feet in length, on the southern side of the new channel, was completed in 1876, and the same year the old channel was closed. Expenditures were made nearly every year from 1876 to 1902, in repairs to the pier, the construction of brush and stone work on the southern side, and of protection works on the northern side of the channel.

On the completion of repairs undertaken in 1901-2, the works included, viz.:—

On the south side, the remains of a pier, 835 feet in length and 20 feet in width, founded in about 12 feet at extreme low water, sloping from about 10 feet below extreme low water, at the face, to 2 feet above extreme low water at the back.

A work of brush and stone, of various widths, extending outwards from the outer end of the pier about 1,600 feet, the inner end of which was 8 feet above and the outer end 5 feet below low water.

Brush and stone work at the back of the pier, 800 feet in length, 10 to 12 feet in width, on top, and 7 feet in average height.

On the north side, five pile and brush groynes, four of which are from 75 to 85 feet in length, and one 45 feet.

In 1903, the minimum depth, at extreme low water, over the bar, about 600 feet outwards from the head of the pier, was 6 feet 3 inches. In July, 1906, the depth over the bar was increased to 16 feet, according to report on dredging for 1906-7. This depth had decreased to 13 feet in November, 1907, and to 9 feet in July, 1908.

During the fiscal year 1908-9, the sum of \$103,726.17 was expended, in raising the work, closing the former entrance with brush and stone, from 1 to 5 feet above high water, over a distance of 330 feet; in raising the brush and stone work on the southern side of the entrance; in repairs to the groynes on the northern side, and in placing some additional stone in the brush and stone work over the work, closing the former entrance.

Operations were commenced July 13, and completed October 17.

LOWER WEST PUBNICO.

Lower West Pubnico, Yarmouth county, is a thriving and thickly populated district, situated on the west side of Pubnico harbour, from 30 to 35 miles southeast of Yarmouth. The people are engaged in fishing and farming.

Spring tides rise about 12 feet

In 1908-9, the sum of \$499.97 was expended in digging a boat channel through the mud flats which are dry at low water, from the end of the public wharf to the

9-10 EDWARD VII., A. 1910

main channel. The channel is 1,000 feet long, 12 feet wide and of an average depth of 2 feet.

The work was begun on September 7, and finished on October 8, 1908.

MALIGNANT COVE.

Malignant Cove, Antigonish county, is situated on the southeastern shore of Northumberland Strait, about midway between Arisaig and Georgeville, and distant about 4 miles from each.

During the year 1908-9, the sum of \$3,989.31 was expended as follows:—

In procuring creosoted timber required for extension of piers, a distance of 30 feet.

In close-piling with creosoted timber, the channel face and outer end of western pier; in reconstructing the top of the outer end of the same pier, for a distance of 50 feet, and of another section, 60 feet in length, commencing at a point, 100 feet from its inner end; in the renewal of covering on outer end of eastern pier; and in placing brush and stone work along the outside of protection work, for a distance of 150 feet.

The work was commenced on July 25, and completed on November 30, 1908.

MANTHORN'S COVE.

Manthorns Cove (Seal Harbour). Guysborough county, is on the south or Atlantic coast of Nova Scotia, 2 miles to the eastward of the entrance to Isaac's harbour and about one-quarter of a mile to the eastward of a breakwater at Drum Head, constructed in 1903-4 and extended in 1906-7.

During the fiscal year 1908-9, the sum of \$500 was expended in improving the entrance to the cove by removing several large boulders, by means of a diver.

Operations were commenced October 27, and completed November 19.

MARGAREE HARBOUR.

Margaree Harbour, Inverness county, at the mouth of Margaree river, is on the west coast of Cape Breton Island, about 30 miles northeast of Port Hood. It had a narrow intricate channel through which the tide ran at the rate of four knots, and its entrance was obstructed by a bar of shifting sand, over which, there was at times, a depth of only 5 feet at extreme low water.

Expenditures have been made by the department in the construction and maintenance of channel protection and improvement works on the west side of the entrance, and in the construction of beach protection works on the east side.

In December, 1907, and during the fiscal year 1908-9, the sum of \$758.66 was expended in general repairs to the work, on the west side of the entrance, and in slight repairs to the pile and brush work, at the inner end of the shear dam.

Operations were in progress from December 9 to 19, 1907, and April 1 to June 15, June 9 to 23, 1908, and February 19 to March 15, 1909.

MARGAREE ISLAND.

Margaree Island, Inverness county, is situated in the Gulf of St. Lawrence, 2½ miles off the western coast of Cape Breton Island, and 27 miles northeast of Port Hood.

During the fiscal year 1908-9, the sum of \$371.92 was expended for the purchase, landing and taking delivery of creosoted timber, and for removing the creosoted timber to a safe place.

MARGAREE RIVER.

Margaree river, is a large stream on the west side of Cape Breton Island, flowing through extensive and fertile meadows to the Gulf of St. Lawrence.

SESSIONAL PAPER No. 19

In 1907-8, the sum of \$735.44 was expended in procuring about one-half of the materials required in the construction of two shear dams, upper and lower, in the Ross-Ingraham settlement, estimated, to cost, respectively, \$2,300 and \$1,200.

During the fiscal year 1908-9, \$2,299.24 was expended, in completing the upper and lower shear dams in the Ross Ingraham settlement for which part of materials required were procured in 1907-8, and \$497.59 in constructing works of brush and stone to protect the banks of the river at Doyle's Bridge and Deagle's Intervale, Margaree Forks.

Total expenditure to March 31, 1909, \$2,796.83.

MARGARETVILLE.

Margaretville, Annapolis county, is the most important village on the south shore of the Bay of Fundy, between Digby Gut and Scott's Bay; it is 42 miles northeast from the former, 36 miles southwest from the latter, and 9 miles north of Middleton, an important station on the Dominion Atlantic Railway. It has a population of about 500 people engaged in fishing and farming.

A pier was begun in 1837 by the provincial government, and subsequently extended to a length of 471 feet. The work was taken over by the Public Works Department in 1871, since which time it has had frequent renewals and repairs, a full history of which will be found in the report of the department for the year 1907-8.

In 1908-9, the sum of \$2,531.13 was expended in building an extension to the eastern breakwater, 50 feet long, from 32 to 40 feet wide and from 22 to 25 feet high.

The work was begun on October 1, 1908, and completed March 31, 1909.

MARTIN'S BROOK.

Martin's Brook, Lunenburg county, is a small fishing and farming settlement of about 20 families, situated on the west side of Mahone bay, at the head of Prince's inlet.

To enable boats to reach the mill at the head of the inlet, the department, in 1908-9, expended the sum of \$290.96 in digging a boat channel, about 300 feet long. Some 350 cubic yards of mud were removed.

The work was begun July 5, and completed August 31, 1908.

MERIGOMISH STATION.

Merigomish Station, Pictou county, is on the Intercolonial Railway near the crossing of French river, a tidal stream emptying into the Gulf of St. Lawrence, 10 miles to the eastward of the entrance to Pictou harbour.

During the fiscal year 1908-9, the sum of \$340.25 was expended in constructing a small pile wharf, 30 feet in line of channel, with an inclined landing on the east side of French river, for the accommodation of boats coming to Merigomish Station for supplies.

The work was commenced September 12, and completed October 6.

METEGHAN RIVER.

Meteghan river, Digby county, empties into the Bay of Fundy, at the mouth of St. Mary's bay, almost directly opposite Grand passage, between Long island and Brier island. The village, at the mouth of the river, is 20 miles south of Weymouth, 28 miles north of Yarmouth and $2\frac{1}{2}$ miles north of Meteghan, or Meteghan cove. The population of the village is about 400 people, engaged in fishing, farming and lumbering. The nearest railway station, on the Dominion Atlantic Railway, which runs parallel with the bay shore, is about 4 miles from the village.

In 1908-9, the sum of \$3,000 was expended in building a new northern breakwater wharf. The work is substantially built of round log cribwork, and is 180 feet long, 21 feet wide and from 6 to 14 feet high. It was begun August 24, and completed November 30, 1908.

9-10 EDWARD VII., A. 1910

MIDDLE COUNTRY HARBOUR.

Country Harbour, Guys-boro county, is on the Atlantic coast of Nova Scotia, 36 miles to the westward of Cape Canso. It has an excellent land-locked anchorage, in $4\frac{1}{2}$ fathoms, $\frac{1}{2}$ miles inland, and is navigable for large vessels $6\frac{1}{2}$, and for small vessels to Narrows Point, $8\frac{1}{2}$ miles inland. Boats can ascend to the head of tide, 2 miles above Narrows Point.

During the fiscal year 1907-8, a contract, entered into on March 1, 1907, for the construction of a wharf at Middle Country Harbour, was completed, and the sum of \$143.90 was expended, by day labour, in grading and fencing the right of way thereto.

The wharf is a block and span structure, 139 $\frac{1}{2}$ feet in length, consisting of a stone abutment, 21 feet in width, three central blocks, each about 22 feet 8 inches in width, and an outer block, 22 feet in line of work by 32 feet 4 inches. The depth at the outer end, at extreme low water, is 14 feet.

Spring tides rise 6 feet.

The sum of \$600 was authorized for expenditure in 1908-9 in the construction of a warehouse. A contract entered into June 19, 1908, for the construction of a warehouse, 30 by 20 feet, with platform, on the north side and near the inner end of the wharf, for the sum of \$585, was completed on August 17, 1908.

Work was commenced June 20, and completed August 17.

MIDDLE RIVER (INDIAN BROOK).

Indian brook, Victoria county, is a large stream emptying into the Middle river, about 4 miles from its mouth, and about 1 mile below the shear-dam, constructed by the department at lower Middle river.

At a point on Indian brook, about one mile above its junction with the Middle river and immediately below the highway bridge, which crosses the brook here, some years ago, the brook left its old channel, which was comparatively straight, and, by cutting a new one through the intervalle, caused a considerable amount of damage.

It is proposed to construct a shear-dam, 280 feet in length, to deflect the brook back into its old channel, and thus to prevent further damage to the intervalle.

During the year ended March 31, 1909, the sum of \$532.56 was expended in procuring the necessary materials for the construction of the proposed dam.

MIDDLE RIVER (LOWER).

Middle River, Victoria county, is a large stream, emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes.

About 5 miles from its mouth, the river flows through alluvial lands, easily acted upon by the strong currents, particularly during freshets, and, by opening new channels, caused great loss of valuable lands.

Since 1903, three shear dams were constructed along the river at this point, for the purpose of straightening and confining the course of the river, and the works proved successful as far as they went. At the end of the year 1907-8, the lower dam was 1,042 feet in length, the middle dam 120 feet, and the upper dam 600 feet.

Out of the amount voted for 1908-9, the sum of \$1,997.15 was expended in repairs to the lower dam, where it was undermined; in repairs to the upper dam, by the construction of a low dam, 400 feet in length, along the face of the upper end of the dam, to protect undermined portions and to prevent similar action, and in the extension of the upper dam down stream, for a distance of 200 feet. All dams consist of pile work, filled in solid with brush and stone, protected on the channel face with 3-inch plank close-sheathing.

The work was commenced on September 25, and completed on December 23, 1908.

SESSIONAL PAPER No. 19

MIDDLE RIVER (UPPER).

Upper Middle River, Victoria county, is a settlement on the Middle river, a large stream emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes, and is situated about 11 miles from and above the mouth of the river.

For the purpose of deflecting the course of the river above the foot bridge, where it threatened to leave the old, and cut a new channel through valuable intervale lands, during 1907-8, the sum of \$2,085.29 was expended in the construction of a shear dam, 400 feet in length, the inner 100 feet consisting of brush and stone, and the outer 300 feet, of three rows of pile work, 15 feet wide, filled in solidly with brush and stone and sheathed with plank on the channel face.

During the year ended March 31, 1909, the sum of \$99.99 was expended in placing ballast in the work, where it had settled.

The work was commenced on the 3rd, and completed on the 5th of November, 1908.

MIDDLE WEST PUBNICO.

Middle West Pubnico, Yarmouth county, is a thriving fishing and farming settlement on the west side of Pubnico harbour, about 35 miles from Yarmouth.

In 1908-9 the department expended the sum of \$500 in digging a boat channel through the mud-flats, which were bare at low tide, from the head of the public wharf to the main channel. The work is 1,100 feet long, 15 feet wide and from 1 to 2 feet in depth. The work was begun September 1, and completed October 9, 1908.

MINUDIE.

During the last fiscal year the sum of \$249.67 was expended in constructing a ferry slip. The slip runs out from the shore on the inside of the wharf, a distance of 80 feet, and is constructed in the shape of cribwork blocks, without ballast. It is 14 feet in width and has attached to it 36 empty casks, which keep it at the proper height.

Work was commenced August 16, and completed October 14, 1908.

Spring tides rise 40 feet; neaps, 30 feet.

MIRA RIVER.

The Mira river, Cape Breton county, is a large stream flowing into Mira bay, a bay on the east coast of Cape Breton island, between Cow Bay and Louisburg harbour. It discharges the waters of Mira lake and Salmon river, and is the outlet of an interior navigation of about 20 miles; but the ordinary depth over the bar, at its entrance into the bay, is only 4 feet and seldom exceeds 8 feet, except in extraordinary spring tides. Two miles above the entrance, the river expands into a lake of varying widths. It is crossed by the Sydney and Louisburg Railway bridge, and by a highway bridge near the entrance, by the Albert and Marion highway bridges, respectively $5\frac{3}{4}$ and $13\frac{1}{2}$ miles from the entrance, and by the Victoria bridge at the head of navigation, $25\frac{3}{4}$ miles inland. These, with the exception of the Victoria bridge, are draw bridges. During the summer season, several small steamers are engaged in passenger and freight traffic, landing being effected at small and inconvenient wharfs near the Albert, Marion and Victoria bridges.

The sum of \$1,150 was appropriated for expenditure in 1908-9 in the construction of a wharf.

In February and March, the sum of \$414.54 was expended in procuring all the timber (with the exception of covering) required in the construction of a wharf, on the east side of the river, at Grand Mira, known locally as Grand Mira South, $3\frac{1}{2}$ miles below Victoria bridge. The work proposed is a block and span structure, extending 75 feet from high water to 8 feet at low water, the depth required for small steamers and sailing vessels.

9-10 EDWARD VII., A. 1910

MONK'S HEAD.

Monk's Head, Antigonish county, is on the southern shore of St. George's bay, between the harbours of Antigonish and Pomquet. A large sheet of water, to the westward of Monk's Head, known as Dunn's lake, is separated from the bay by a beach of shingle, and, from Antigonish harbour, by a neck of marsh land.

In 1894-5, a channel for boats was opened between Dunn's lake and Antigonish harbour, and a highway bridge was constructed over its western entrance. Subsequently the bridge and its abutments were reconstructed and protection works of brush, stones and piles were constructed, extending from the bridge inwards, on the northern side 215 feet and on the southern side 240 feet. The channel is 700 feet in length and has a minimum depth of one foot, at extreme low water. Spring tides rise 4 feet.

In 1904-5, the sum of \$179.78, was expended in repairs to the bridge, including removing and replacing the super-structure and reconstructing the faces of the brush and stone abutments.

During the fiscal year 1908-9, the sum of \$341.20 was expended in renewing the covering and railing of the bridge and in constructing 150 feet of the retaining wall of the canal.

Work was commenced October 3, and completed October 30, 1908.

MORDEN.

Morden, Kings county, formerly called French Cross, is a small fishing and farming village of about 150 people, situated on the south shore of the Bay of Fundy, 50 miles northwest of Digby Gut, and 9 miles from Aylesford Station on the Dominion Atlantic Railway.

In 1908-9, the sum of \$263.80 was expended in repairing and renewing a portion of the covering plank of the breakwater and in the purchase of timber for further repairs and renewals, in 1909-10.

Work was begun April 16 and completed April 23, 1908.

MORRISON'S COVE (WRECK COVE).

Wreck Cove, Victoria, is situated on that part of the northeastern coast of the island of Cape Breton, called the 'North Shore,' between the harbours of St. Ann's and South Ingonish, and is distant 12 miles from the latter.

During 1908-9, the sum of \$199.99 was expended in improving the boat landing by the removal of a large number of boulders, which rendered the hauling up and the launching of fishing boats very inconvenient and often dangerous, off the beach, and in building, with them, a wall in front of the fish houses to protect them from the wash of the seas.

The work was commenced on November 16, and completed on December 30, 1908.

MC NAIR'S COVE.

McNair's Cove, Antigonish county, is on the west side of St. George's bay, about 2 miles to the southward of Cape George.

A breakwater, 400 feet in length and 20 feet in width was built on the north side of the cove during 1872-73-74, and in 1878 a length of 20 feet was added thereto. In 1878, the work was carried away by drift ice to within 100 feet of the shore end, down to from 3 to 6 feet below low water. During the summer of 1883, 70 feet of the shore end was rebuilt, and during the winter of 1884, the work was extended 94 feet, but this extension was badly damaged by drift ice in April, 1885, and was subsequently carried away.

SESSIONAL PAPER No. 19

During 1886-87-88, the bottom of the damaged work was dredged out, and a new work, 160 feet in length, 34 feet wide on top, with a sloping face on the seaward side, was constructed, and, on its completion, the total length of the breakwater was 330 feet.

The work was constructed entirely of native timber, and as it became weakened by the action of the teredo, during the years 1890-1-2-3-4, the outer end, and on each side of it for a distance of 20 feet, was protected by creosoted timber close piling, and its seaward face, by a talus of quarried stone.

During the years 1897-1901, the timber wall under the sloping face, which was destroyed by the teredo, was reconstructed down to low water and close fendered with hardwood timber; the stone talus was raised up to the top of the close fendering, and the work was reballasted and re-covered where necessary.

During 1901-2-3, the inner end of the work which was constructed partly in 1872 and partly in 1883, and was only 20 feet wide, was for a distance of 120 feet, widened to 30 feet, and the old top was cut down to low water and re-constructed with new materials.

During 1903-4, an extension of 80 feet long and 32 feet wide, placed across the outer end of the old work forming an 'L,' 40 feet in length, was constructed, as a protection to the old work, and to improve the sheltered area behind the breakwater. The work is constructed of round timber, creosoted to half tide, fully ballasted and fendered and it is protected on all outer faces with close sheathing.

In the fiscal period ended March 31, 1907, the sum of \$244.58 was expended in placing some stone in the talus; in reballasting the work in places, and in the renewal of a few pieces of covering.

The sum of \$2,700 was voted for expenditure during 1907-8, for the reconstruction of the seaward face of the work, from low water mark up, 16 feet wide and 80 feet in length, with creosoted timber bottom; to close-sheathe the new face, and to raise the talus outside to high water mark.

Up to the end of the year 1907-8, out of the amount granted, the sum of \$2,312.62 was expended in procuring all the necessary materials required for the work and in temporary repairs, but on account of the late delivery of the creosoted timber, the work intended was not completed.

The sum of \$4,800 was voted for expenditure during 1908-9 as follows:—

\$1,800 for the reconstruction of the top of the outer end of the old breakwater and \$3,000 towards a further extension.

Of the amount voted for repairs, the sum of \$1,809.75 was expended in the reconstruction of the outer end of the seaward face of the old work, from 2 feet below low water up, 16 feet in width, and for a distance of 80 feet, with creosoted timber to half tide; in close sheathing the new face and in raising the talus, in front of it to high water mark, by placing some 475 cubic yards of heavy quarried stone upon it.

No part of the amount granted towards the extension of the pier was expended, but the necessary creosoted timber has been ordered.

The repairs were commenced on September 2, 1908, and completed on March 23, 1909.

NECUM TEUCH.

Necum Teuch (pronounced 'Neeumtau'), Halifax county, is the name given to a settlement lying on the east side of Necum Teuch bay, at the mouth of Moser's river. It is 68 miles in an air line E.N.E. from Halifax, and 6 miles from Salmon river. The population of the place embraces about 400 people, engaged in farming and lumbering.

In 1908-9, the sum of \$477.50 was expended in building an 'L' to the public wharf. It consists of a block of cribwork, 30 feet long, 20 feet wide and 18 feet high, besides a span of 10 feet connecting it with the rest of the wharf.

The work was begun August 1, and completed September 5, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

9-10 EDWARD VII., A. 1910

NEIL'S HARBOUR.

Neil's Harbour, Victoria county, is situated on the eastern coast of Cape Breton island, about midway between Ingonish and Aspy bays.

During the year ended March 31, 1909, the sum of \$778.76 was expended in raising the talus on the seaward side of the breakwater to high water mark, filling in the spaces between the stones with concrete, and in filling in, with large stones laid in cement, a space about 20 feet wide, between reefs to the eastward of the inner end of the breakwater, where the sea, at high water, during storms from the eastward rolled in with great force and striking the seaward face of the work, disturbed the stone in the talus; and a lot of stone, which had been washed over the work by the sea and deposited inside, was removed by divers and placed again on the talus.

The work was commenced on October 19, and was completed on December 5, 1908.

NEW GLASGOW.

New Glasgow, Pictou county, is an important manufacturing town and business centre on the Intercolonial Railway and at the head of navigation, in the east river of Pictou.

A contract was entered into on March 12, 1908, for the construction of a 200-foot cribwork extension of a wharf in New Glasgow, under the control of a harbour commission, for the sum of \$3,999.

The work under contract was commenced June 4, and completed September 30, 1908.

NOEL.

Noel, Hants county, has a population of about 500, and is situated on the south shore of Cobequid bay, the extreme eastern arm of the Bay of Fundy. It is 13 miles west of Maitland, and 32 miles northwest of Shubenacadie, the nearest railway station on the Intercolonial railway. It is at this date, almost exclusively a farming district, the export of timber and the building of wooden ships, which some years ago were important industries, having practically ceased.

In 1908-9, the sum of \$1,977.08 was expended in building an extension to the pile-wharf, 60 feet long and 40 feet wide, along the west side, and 60 feet long and 10 feet wide, on the northern face or outer end of the work.

Work was begun on October 8, and suspended December 23, 1908.

Spring tides rise 50½ feet; neaps, 43½ feet.

NORTH RIVER.

North river empties into the northern arm of St. Ann's harbour, on the eastern coast of the island of Cape Breton.

A wharf was constructed by the department during 1898-9-1900, at Seymour point, on the northern side of the mouth of North river. It extends to 9 feet at low water, and it consists of a road approach, 64 feet long and 16 feet wide; of a block and span work, 63 feet long and 20 feet wide, and of a creosoted timber pile extension, 175 feet long and 20 feet wide, with an 'L,' 20 by 20 feet, at its outer end.

As the top of the wharf was getting weak, through wear and natural decay, during 1908-9 the sum of \$968.53 was expended in the renewal of a portion of the floor stringers and the whole of the plank covering, the cap and the chocks between the heads of fender piles.

The work was commenced on November 16, 1908, and completed on January 23, 1909.

SESSIONAL PAPER No. 19

NORTH SHORE, ST. ANN'S.

The North shore, Victoria county, so called, is that portion of the northeast coast of the island of Cape Breton which lies between St. Ann's harbour and Cape Smoky.

The boat landing at Roderick McLeod's is situated at the southern end of Wreck Cove, about 8 miles to the southward of Cape Smoky, and, as the bench there offers better landing facilities than at other points in the neighbourhood, it has been used for many years by the fishermen of the district as a landing for their boats.

During the year 1908-9, the sum of \$99.95 was expended in the removal of some forty large boulders which interfered with the landing of the boats, and in piling up the boulders on the northern side of the landing place, so as to partially break the sea from that quarter.

The work was commenced on November 5, and completed on November 16, 1908.

OSBORNE.

Osborne is a small town of about 150 people, situated a mile and a half to the northeast of Lockeport. The people here are largely engaged in fishing and farming, and have had, for their accommodation, a small wharf, which was built about thirty-five or forty years ago by the provincial government. This wharf had thoroughly decayed, and, during the last fiscal year, the sum of \$1,400 was granted towards its reconstruction and extension. Work was begun on September 17, and completed on November 26, 1908, during which period the sum of \$1,308.61 was expended.

The work done consisted in the tearing down of the old wharf, and the construction of a new one, which is composed of two blocks of cribwork about 12 feet high and 20 feet wide, separated from each other by a span 18 feet long; of 100 feet of pile trestle work, and of a stone bank approach, 80 feet long and about 4 feet high.

Spring tide rises here 6 feet; neaps, $4\frac{1}{2}$ feet.

OWL'S HEAD.

Owl's Head, Halifax county, is a fishing settlement on the Atlantic coast, immediately west of the entrance of Ship harbour, 50 miles east of the city of Halifax. The population of the place within a radius of a mile is about 300 people, dependent almost wholly on the fisheries. The value of the annual catch is about \$17,000.

In 1908-9, the sum of \$1,947.58 was expended in the partial construction of a public wharf and in the purchase of timber for its completion.

OYSTER POND.

Oyster Pond, Guysboro county, is one of several large ponds on the north shore of Chedabucto bay, which form the only boat harbours between Cape Argos, on the western side of the southern entrance to the Strait of Canso, and Guysboro harbour, a distance of 15 miles.

During the fiscal year 1908-9, the sum of \$3,337.44 was expended in procuring the balance of materials required; in completing the 100-foot extension of the eastern breakwater, in progress in 1907-8, and in procuring nearly all the timber and the iron required in the construction of a proposed breakwater, 312 feet in length, on the western side and immediately opposite the entrance.

PARKER'S COVE.

Parker's Cove, Annapolis county, is a small indentation on the southeast coast of the Bay of Fundy, 15 miles northwest of Digby Gut, and 7 miles north of Annapolis,

9-11 EDWARD VII., A. 1910

the county town. The population of the settlement is about 250, engaged in fishing and farming.

Spring tides rise 30 feet.

In 1908-9, the sum of \$955.98 was expended in the purchase of timber for the construction of a breakwater on the western side of the mouth of the harbour.

PARRSBORO.

Parrsboro is a town of nearly 3,000 people, situated on the Cumberland Basin, about 25 miles from the town of Springhill. About thirty-five millions of lumber is annually shipped from this port, while it is also the shipping port for the Cumberland Coal and Railway Company, whose annual output is now approaching 500,000 tons of coal. Besides this, it is surrounded by quite a large tract of farming land, the produce of which forms a considerable item.

The sum expended here amounted to \$7,568.

Work was begun here August 10, 1908, and completed March 30, 1909; it consisted in renewing 30 feet in length of the top of the work, 350 feet in length of the inside guard-rail, 20 pieces of sheathing on the outside of the work, and brushing the foundation for about 40 feet in length on the outside.

Spring tides rise here about 35 feet; neaps, 29 feet.

PEREAUX.

Pereaux, Kings county is a rich and prosperous agricultural district, with a population of some 300 to 400, situated on the west side of the Basin of Minas, 3 miles north of Kingsport, and 5 miles south of Cape Blomidon. From Kingsport to Cape Blomidon is a thickly settled and fertile agricultural district.

In 1908-9, the sum of \$89.28 was expended in completing the work. It consists of a block and span wharf 160 feet long, 20 feet wide on top and from 12 to 20 feet high. There are eight blocks of cribwork and seven spans, the blocks being 10 by 10 feet on top, except the outer one, which is 30 by 10 feet. The blocks batter 2 inches to the foot all around as a safeguard against lifting by ice.

The work was begun April 25, and completed April 28, 1908.

PETITE RIVIERE.

Petite Riviere, Lunenburg county, is the centre of a thriving farming and lumbering district, situated about 12 miles southwest of the town of Bridgewater, and 6 miles west of the La Have river. The village, which has a population of about 500, is situated at the mouth of a small river, from which it takes its name. The nearest railway station is 6 miles, and the nearest harbour, at La Have, 6 miles distant.

In 1908-9, the sum of \$456.14 was expended in repairs to the covering of the breakwater, which had been damaged by ice and heavy seas.

The work was begun September 1, and completed November 15, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

PETITE RIVIERE (CROUSETOWN).

Petite Riviere (Crousetown), Lunenburg county, is a farming and lumbering settlement of about 100 people, situated upon the river, about 3 miles above the village of Petite Riviere proper.

In 1908-9, the sum of \$150.51 was expended in removing some rocks from the bed of the river at a point about 3 miles above the breakwater.

The work was begun September 19, and completed September 30, 1908.

SESSIONAL PAPER No. 19

PICTOU ISLAND.

Pictou Island, Pictou county, is situated in the Strait or Cumberland, about 10 miles northeast of the entrance to Pictou harbour.

Of the \$5,000 appropriated for reconstructing and extending the outer 60 feet of the east wharf, the sum of \$821.90 was expended in February in procuring part of the native timber and iron required in the construction of a proposed 104-foot block, with creosoted substructure.

PLEASANT HARBOUR.

Pleasant Harbour, Halifax county, is a well sheltered harbour or bay, situated 3 miles west of Tangier, 4 miles east of the mouth of Ship Harbour and about 48 miles in an air line east of Halifax. It embraces a scattered population of about 200, engaged in fishing and farming.

In 1908-9, the sum of \$740.74 was expended in beginning the construction of a public wharf and in the purchase of timber for its completion.

POIRIERVILLE.

Poirierville, Richmond county, commonly known as Lower D'Eseousse, is a settlement on the northeastern coast of Madame island, on the southern side of the eastern entrance of Lennox passage, a strait separating the island from Cape Breton island.

On September 19, 1906, a contract was entered into, in the sum of \$7,575, for the construction of a public wharf, but owing to delay in the delivery of the creosoted timber required, the work of construction was not commenced until September 24, 1907, and continued to November 30, 1907, when it was suspended for the season; on that date the blocks were all constructed up to the required height and fully ballasted, and about one-half of the floor stringers were placed on the blocks and across the spans.

The work was again resumed on June 1, 1908, and was brought to completion on September 12.

The wharf extends to 10 feet at low water and is 340 feet long, 20 feet wide, with an 'L' on the southern side of the outer end, 20 by 20 feet, and consists of crib-work blocks and spans, the blocks being built of round timber with creosoted timber sub-structure; as a protection against ice, the faces of the outer block and the seaward faces and outer ends of the two blocks next to the end block, have been close-sheathed.

PORTER'S LAKE.

Porter's lake, Halifax county, is a long, narrow strip of fresh water, lying nearly north and south and situated about the middle of Halifax county, or about 15 miles east of the provincial capital. It is about 18 miles in length, from a quarter to half a mile wide, and, the water being of good depth for almost its entire length, it is navigable for vessels of 60 tons to its extreme head. The normal level of the lake is some 2 or 3 inches above H.W.O.S.T.

In 1908-9, the sum of \$801.86 was spent in re-opening the old outlet, and in making a new experimental outlet through Half Island beach. This has not proved a success, owing to the great exposure of the beach and the filling up of the outlet by sand and gravel after every heavy storm. \$1,484.52 was expended in further deepening the permanent outlet.

PORT DUFFERIN.

Port Dufferin, Halifax county, formerly called Salmon River, is a thrifty village of from 500 to 600 people, engaged in fishing, lobster-canning and gold mining;

9-10 EDWARD VII., A. 1910

situated at the head of Salmon river, that empties into the inlet known as Beaver harbour, about 85 miles east from Halifax by high road and about half way between Halifax harbour and Canso.

In 1908-9, the department expended the sum of \$452.12 in the purchase of timber for the construction of a breakwater at Smiley's Point, about a mile below the public wharf.

PORT GREVILLE.

Port Greville is a village of about 350 people, situated 12 miles west of Parrsboro. Important shipbuilding and lumbering interests are located here, which are mainly dependent upon the security of the harbour.

During the last fiscal year, the sum of \$995.67 was expended in effecting the necessary repairs to the breakwater. About 60 feet in length of the work was torn apart and rebuilt; 1,000 feet of covering on the old work was replaced; new fenders were added and where the work was undermined, for a length of about 80 feet, brush work was placed in position, and the whole inner face, for a distance of 110 feet, was close-piled, so as to prevent undermining.

Work was commenced August 10, and completed in October, 1903.

Spring tides rise here about 37 feet; neaps, 30 feet.

PORT HAWKESBURY.

Port Hawkesbury, Inverness county, is on the eastern side of the Strait of Canso, nearly opposite Port Mulgrave.

During the fiscal year 1908-9, the sum of \$148.36 was expended in reconstructing top of chimney and in painting west side of the roof of the outer warehouse; in painting both sides of the roof of inner warehouse; in renewing the sheathing of the outer corners of the wharf, and in levelling up the floor stringers and covering of the approach.

Operations were in progress December 7 to 24, and March 15 to 29.

PORT HILFORD.

Port Hilford, Guysborough county, is at the head of Indian bay on the southern or Atlantic coast of Nova Scotia 5 miles to the eastward of the mouth of St Mary's river.

During the fiscal year 1908-9, \$5,336.53 of the \$7,000 appropriated, was expended in procuring the creosoted and native timber required and in constructing a block at the outer end of the breakwater, 41 feet in length (across outer end of 'L') and 27 feet in average width; and in extending the close sheathing on the inner side 161½ feet inwards.

The new outer end block is of open-faced cribwork, with creosoted sub-structure, fully ballasted, and close fendered at the ends and outer face. Depth at outer face, 13½ feet at low water. Spring tides rise 6 feet.

Operations were in progress July 16, to January 16, and March 1, to 24.

PORT HOOD HARBOUR.

The harbour of Port Hood, Inverness county, is on the east coast of Cape Breton Island, about 20 miles to the northward of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one; Smith island which forms its west side, having been connected with the mainland by a beach of sand. In 1839, the sea made a breach through the beach; the opening, at first narrow, was enlarged by the tidal currents with increasing rapidity until it was entirely swept away. The harbour is now unsafe during northerly gales, except in a small cove on the east side of Smith island.

SESSIONAL PAPER No. 19

In March, 1902, a report was submitted on the closing of the northern entrance, in which the estimated cost of work suggested varied from \$482,000 to \$291,000, according to design and location.

The amount appropriated for 1903-4 (\$20,000) was for expenditure by day labour, in constructing a portion of a breakwater of brush and stone with stone talus and covering. Operations were commenced in May and were in progress at the close of the fiscal year ended June 30, when the expenditure amounted to \$2,968.85. This sum was expended in procuring materials and in constructing a work of brush and stone, 28 feet in width, on top, at high water level, extending from the mainland 330 feet to 3 feet at extreme low water.

In 1904-5, the sum of \$19,942.43 was expended in extending the brush and stone work 470 feet, (800 feet from the mainland) to 6 feet at extreme low water, and in placing a talus on both sides and a covering of quarried stone.

Of the amount appropriated for 1905-6, the sum of \$9,999.91 was expended, \$2,984 in March and April in procuring materials, and the balance in July, August and September in extending the brush and stone work 185 feet (988 feet from the inner end) to 9½ feet at extreme low water, and in placing a talus on both sides and a covering of quarried stone.

During the fiscal year of nine months ended March 31, 1907, the sum of \$15,000.38 was expended in June, July and August, in extending the brush and stone work 309 feet (988 to 1,297 feet from the inner end); of the 309 feet, the inner 60 feet was completed up to 2 feet above high water and protected with quarried stone on each side and on top, 191 feet was up to within 1½ feet of low water with quarried stone on the seaward side, and 58 feet of the outer brush and stone work was up to 5 feet below low water. There was also expended in August, September and October, the additional sum of \$1,814.77, in placing quarried stone over the 249 feet of work, left unprotected.

Of the \$15,000, appropriated for 1907-8, the sum of \$14,999.37 was expended in completing the 249 feet of work left unfinished in 1906-7, in procuring quarried stone for work in 1908-09, and in purchasing a donkey engine and round timber to be used in the construction of derricks.

During the fiscal year 1908-9, \$14,999.98, of the \$15,000, appropriated, was expended and an additional expenditure of \$663.36 was incurred, in extending the brush and stone work 363 feet, or from 1,297 to 1,660 feet from the inner end, and in placing a single brush mattress 60 feet in length at the outer end. Of the 363 feet, the inner 303 feet was completed, including slopes up to 2 feet above high water, and the outer 60 feet was left sloping from 2 feet above high water, and the inner end, to 10 feet below high water, or to 6 feet below low water, at the outer end, the depth at the outer end at low water being about 14 feet.

PORT HOOD WHARF.

Port Hood, the shiretown of Inverness county, is on the west coast of Cape Breton Island, 20 miles north of the northern entrance to the Strait of Canso.

During the fiscal year 1908-09, the sum of \$1,199.96 was expended on the pier in renewing some ballast, the floor stringers and covering of part of the 'L' 50 feet in width and 80 feet in length, from inner end of 'L' outwards, and in general repairs to 30 feet of the seaward face near the outer end.

Work was commenced August 1, and completed October 30.

PORT LATOUR (UPPER).

Port Latour, Shelburne county, is a fishing and farming settlement, situated 25 miles southwest of Shelburne town.

During last fiscal year, work was commenced September 16, and was finished November 26, 1905, at a cost of \$511.12. The work done consists in completing a

9-10 EDWARD VII., A. 1910

blocking and a span, at the head of the wharf, in replacing about six fenders, five stringers, four guard rails, and in constructing a small freight shed, 24 by 15 feet.

Spring tides rise here about 10 feet; neaps, 7½.

PORT LORNE.

Port Lorne, Annapolis county, formerly called Port Williams or Marshalls Cove, is situated on the Bay of Fundy, 32 miles northeast of Digby Gut, and 6 miles northeast from Paradise Station, on the Dominion Atlantic Railway. The settlement comprises about 300 people, engaged in fishing and farming.

In 1908-9, the sum of \$2,958.86 was expended in the construction of a new breakwater on the east side of the little harbour. The work is 140 feet long, 25 feet wide and from 7 to 15 feet high.

Work was begun on September 15, and suspended on December 31, 1908.

PORT MAITLAND.

Port Maitland, Yarmouth county, is a prosperous and important fishing and farming village, with a population of about 600, situated on the southeast side of the mouth of the Bay of Fundy, 12 miles north of the county town of Yarmouth.

In 1908-9, the sum of \$1,840.54 was expended in repairs to the covering of the outer end of the breakwater; in constructing a new inclined boat-slip on the inner side of the shore end of the work, and in the purchase of timber for the construction of a new re-enforcing block along the outer face of the 'L.'

The work was begun on May 6, and suspended on November 27, 1908.

Spring tides rise 18 feet; neaps, 15 feet.

This work was transferred to the control of the Department of Marine and Fisheries on June 22, 1885.

PORT ROYAL.

Port Royal, Richmond county, is a settlement on the western side of Madame island, about 2½ miles to the northward of West Arichat, and on the northern side of the eastern end of Leblanc harbour.

On March 23, 1908, a contract was entered into, in the sum of \$4,775, for the construction of a wharf.

The work of construction was commenced on July 9, 1908, and was completed on September 14 following.

The wharf extends to 8 feet at low water, or to 14 feet at high water, and is a block and span structure, 177 feet long and 18 feet wide, with an 'L' on the eastern side of the outer end, 18 by 18 feet; it consists of an approach of stone and clay, 37 feet long, of three cribwork blocks, 18 feet long, and of an outer block 18 by 36 feet, with openings between them 17 feet long. The blocks are constructed of round timber, laid open faced, with creosoted timber sub-structure, properly ballasted, fendered and covered, and the three outer faces of the outer block are close-sheathed between the fenders. Spring tides rise 6 feet; neaps, 4 feet.

Total expenditure during last fiscal year, \$4,916.35.

PORTUGUESE COVE.

Portuguese Cove, Halifax county, is a small fishing village with a population of about 600, situated 6 miles from Halifax, on the western side of the mouth of the harbour.

In 1908-9, the sum of \$10,000 was expended in the construction, by contract, of a breakwater for the protection of the fishing fleet. The work is of substantial round-log cribwork, close-sheathed and provided on the seaward side with a break,

SESSIONAL PAPER No. 19

217 feet in total length, the shoreward 117 feet being 20 feet wide and the outer 100 feet, 30 feet wide. At the outer end, the work is 21 feet high.

Work was begun May 26, and completed July 20, 1908.

Spring tides rise 6 feet; neaps, 5 feet.

PUBNICO HEAD.

Pubnico Head is situated in the extreme west of Yarmouth county, about 20 miles southeast from the county town. The harbour is 8 miles long, north and south, by three-quarters of a mile to one and a half miles wide. At the extreme head is a settlement of some 500 or 600 people engaged in farming, lumbering and fishing.

In 1908-9, the sum of \$499.88 was expended in the renewal of the whole top of the wharf, consisting of stringers, guard-timbers, planking and mooring posts. The work was begun on October 14, and completed November 29, 1908.

Spring tides rise 10 feet.

PUGWASH.

Pugwash is a town of about 1,000 people, situated on the straits of Northumberland, about 8 miles from Wallace harbour. It is a large shipping port, particularly of lumber, the output of which at this place during the last eight years has averaged about twenty-two millions.

In order to render the shipping facilities more favourable, it was deemed advisable, both by the railway authorities and the department, that the siding should be a level one, and therefore the wharfs had to be raised 5 and 6 feet in height respectively.

Work was commenced on October 6, 1908, and continued until January 30, 1909, and the sum of \$4,498.44 was expended. The new wharf, which is 320 feet long, was raised 6 feet in height and a large portion of the material for the old wharf was secured.

Spring tides rise 6½ feet; neaps, 5 feet.

QUODDY ISLAND.

Quoddy Island, Halifax county, is situated on the west side of Harrigan Cove, about 100 miles east of Halifax, and 4 miles east of Port Dufferin. Within a radius of two miles, there is a population of about 100.

In order to provide a landing pier for the little steamer which plies between Halifax and eastern ports, the department, in 1908-9, expended the sum of \$901.77 in the partial construction of a public wharf.

Work was begun on October 14, and suspended on November 12, 1908.

Spring tides rise about 6 feet.

RABBIT ISLAND.

Rabbit island, Richmond county, is on the northern side of the western entrance into Lennox passage, and on the eastern side of the entrance to Inhabitants bay.

The island, being near the fishing grounds, is an important fishing station, and, for the purpose of affording boats better and safer protection during gales from the westward, and to permit of larger boats being used in the fisheries, the sum of \$4,000 was voted for expenditure, during 1907-8, on the construction of a breakwater, but beyond obtaining the necessary timber, nothing was done during that year and, out of the amount voted, the sum of \$1,058.14 only was expended.

During 1908-9, the sum of \$3,266.31 was expended in the construction of the breakwater, for which the timber was obtained during the previous year.

9-10 EDWARD VII., A. 1910

The breakwater is 180 feet long and 20 feet wide, extending to 8 feet at low water; it is a continuous round native timber cribwork structure, fully ballasted and close-sheathed on the seaward face and outer end.

Construction was commenced on August 29, and completed on November 27, 1903.

RAY'S CREEK.

Ray's Creek, Annapolis county (Upper Granville), is a thickly settled and very rich farming district, situated on the north bank of the Annapolis river, some 4 miles below Bridgetown, and about 10 miles above Annapolis. Within a radius of 3 miles, there is a population of 800 to 1,000.

Spring tides rise about 30 feet.

In 1908-9, the sum of \$39.59 was expended in the removal of a number of boulders from the river bottom, close to the public wharf.

Work was begun on August 24, and completed September 4, 1903.

ROUND HILL.

Round Hill, Annapolis county, is a thickly settled and very prosperous farming district, situated about 8 miles east of the town of Annapolis. There is a station on the Dominion Atlantic Railway. The village, with a population of about 500, is situated from a quarter of a mile to half a mile south of the Annapolis river, which is navigable at high water for large vessels up as far as Bridgetown, some 7 miles farther up.

Some thirty years ago, a small wharf of cribwork was built by private enterprise but it fell into disuse some fifteen years ago. At the present time, all that remains of it consists of a few logs and a little pile of ballast.

For the benefit of local trade, the department, in 1905-6, expended the sum of \$2,000.14 in the construction of a public wharf. It consists of a pile-work stem, 76 feet long by 25 feet wide, from 5 to 16 feet high, terminating in a substantial block of cribwork, 75 feet long, 35 feet wide and from 16 to 22 feet high, founded on piles driven to hard bottom and cut off level with the mud. Along the face of the wharf, at high water, there is about 16 feet of water.

In 1906-7, the sum of \$1,997.41 was expended in continuing the work begun the previous year.

In 1907-8, the sum of \$1.095 was expended in continuing the work, which, at the close of the fiscal year, was not quite completed.

In 1908-9, the sum of \$323.05 was expended in finishing the covering and ballasting of the wharf, which, at this date, is completely finished.

The work was begun September 9, and finished September 22, 1903.

ST. MARY'S RIVER.

St. Mary's river, Guysboro county, is a fine stream, 65 miles in length, traversing valuable timber lands and discharging into the Atlantic ocean about 48 miles to the westward of Cape Canso. The depth at extreme low water in a channel dredged through a bar at the entrance, in 1900-1, is about 14 feet, thence in a narrow and tortuous channel to within half a mile of the village of Sherbrooke, which is at the head of tide, 8 miles inland, from 18 to 12 feet. Spring tides rise 6 feet.

In 1907-8, the sum of \$495.47 was expended in improving the channel, by removing part of a reef, just within the entrance, and some boulders near the head of navigation.

During the fiscal year 1908-9, the sum of \$507.30 was expended in nearly completing the removal of obstructions undertaken in 1907-8. Ten boulders in the narrows, below the Sherbrooke Milling Company's wharf were removed, and six large

SESSIONAL PAPER No. 19

boulders in the channel, opposite the Scotia Lumber Company's wharf, were broken up, to be removed by one of the departmental dredges.

Operations were commenced September 28, and suspended October 20.

SANDFORD.

Sandford (Cranberry Head) is situated on the Atlantic coast of Nova Scotia, at the extreme western point of Yarmouth county, 7 miles northwest from the town of Yarmouth. The settlement in the neighbourhood, which has for some years been known as Sandford, has a population of from 300 to 400, engaged in fishing and farming.

In 1858, a breakwater was begun by the inhabitants, aided by the provincial government. In 1876, the sum of \$2,000 was expended by the department in extending the work 150 feet. In 1878-9, the sum of \$1,000.08 was spent in constructing an additional length of 50 feet and in repairing the older portions.

In 1880 and since, this department has incurred large expenditures in maintaining and improving the works. (For details see annual report of 1905-6.)

In 1907-8, the sum of \$200 was expended in sheathing and fendering a space of about 30 feet in length on the seaward face of the breakwater, which could not be done when the work was built in 1902-3, owing to a portion of the ancient block abutting the new work. The old block has been so far demolished by the sea as to make the sheathing possible.

During the last fiscal year, the sum of \$104.67 was expended in completing the cribwork begun two years ago, which at this date, is completely finished.

The work was begun October 8, and completed October 19, 1908.

SAULNIERVILLE.

Saulnierville, Digby county, with a population of about 350, is situated on the northeast coast of St. Mary's bay, Bay of Fundy, 36 miles southeast of Digby, 32 miles north of Yarmouth and 3 miles north of Meteghan river.

In 1908-9, the department expended the sum of \$1,499.69 in repairs and renewals. On the seaward side of the breakwater, a piece, 90 feet long, 18 feet wide and 18 feet high, being thoroughly dilapidated, was taken down and rebuilt. Other general repairs were made to the rest of the work and some few boulders were removed from the berth alongside and at the outer end.

The work was begun on September 1, 1908, and completed February 26, 1909.

At low water, the sands are bare for several hundred feet beyond the end of the work.

SCOTIA COVE (WHITE POINT).

Scotia Cove, Victoria county, forms the southeastern part of Aspy bay, on the northeastern side of Cape Breton island, and is about $\frac{3}{4}$ of a mile south from White Point, which is on the southern side of the entrance to the bay.

On March 18, 1908, a contract was entered into in the sum of \$28,935, for the construction of a breakwater on the eastern side of the cove, for the protection of fishing boats and small craft.

The work was commenced on June 8, 1908, and was brought to a very satisfactory completion on October 14.

The breakwater is 320 feet long and extends to 19 feet at low water, and, with the exception of the inner end, for a distance of 40 feet, built of stone, is 16 feet wide on top; it consists of cribwork with creosoted timber sub-structure, 20 feet wide for a distance of 80 feet, 24 feet wide for a further distance of 80 feet, and 30 feet wide for the remaining distance of 120 feet. The faces of the cribwork are constructed of squared timber, laid open faced, with ties of round timber, and the work

9-10 EDWARD VII., A. 1910

has been filled in solidly with ballast. The seaward face, the outer end and the inner face for a distance of 30 feet, have been close-sheathed, and a brush mattress, loaded with stone, has been placed along its seaward face, for a distance of 200 feet from the outer end, inwards, to prevent scouring of the sandy bottom.

Total expenditure during last fiscal year: \$29,329.66.

SELMA.

Selma, Hants county, is a small agricultural village of a couple of hundred people, situated on the south side of Cobequid bay, 3 miles from Maitland, and 23 miles from Shubenacadie on the I.C.R.

In the year 1908-9, the sum of \$6,185.60 was expended in building, by contract, a block and span wharf. The work is 398 feet long, of which the shoreward 307 feet is 20 feet wide and the outer 91 feet is 25 feet wide. There are eight blocks 20 by 20 feet, one block 30 by 20 feet, and the outer block is 91 by 25 feet. The spans are all 13 feet. The work is from 3 to 24 feet high, or an average of about 16 feet.

Work was begun May 7, and finished August 10, 1908.

Spring tides rise about 40 feet.

SHORT BEACH.

Short Beach is the name of a small fishing and farming village of about 100 people, situated on the coast of Yarmouth county, 8 miles north of the county town, $1\frac{1}{2}$ miles north of Sandford, and $3\frac{1}{2}$ miles south of Port Maitland.

In 1902-3 and 1903-4, the sum of \$8,155 was expended in the construction, by contract, of a breakwater. The work is 400 feet long, 25 feet wide on top and from 5 to 14 feet high, substantially built of the usual type of round-log cribwork, close-sheathed on the outer face and provided with a break.

In 1908-9, the sum of \$1,992.25 was expended in building an extension to the breakwater, 50 feet long, 25 feet wide and 15 feet high.

Work was begun September 16, and completed November 19, 1908.

Spring tides rise about 14 feet.

SKINNER'S COVE.

Skinner's Cove, Pictou county, is on the western side of Northumberland strait, about 4 miles east of Cape John, and about 20 miles northwest of the entrance to Pictou harbour. A pond at the head of the cove is separated from the waters of the strait by a beach of sand 250 feet in width.

A contract entered into on January 5, 1905, for the opening of a channel through the beach, and for the construction of protection works in the sum of \$10,950, was completed, together with some extra work, costing \$927.41, on August 1, 1906.

The works under contract included the excavation of a channel 15 feet in width at bottom and 425 feet in length, to a depth of $2\frac{1}{2}$ feet at low water; the construction of piers of brush, stone and piles, 304 feet in length and 15 feet in width, on each side, and of a cribwork block 40 feet in length and 20 feet in width with creosoted timber sub-structure, in extension, outwards, of each pier. The extra work included the extension of the piers on each side of the channel, inwards, 40 feet and the placing of additional close-sheathing for a length of 144 feet, on the seaward side and at the inner end of the western pier. Spring tides rise 7 feet.

In 1907-8, the sum of \$739.50 was expended in constructing brush and stone work in extension, inwards, of the piers on each side of the channel. The extensions, 78 feet in length on the west side and 68 feet in length on the east side, are 14 feet in width, on top, and 8 feet in height, founded in trenches excavated to 3 feet above the level of extreme low water.

SESSIONAL PAPER No. 19

During the year 1908-9, the sum of \$2,433.45 was expended in extending the brush and stone work on the west side 78 feet and in raising that on the east side one foot, or to four feet above high water; in procuring a dredging plant and scow, to be used next year in re-opening the channel and in extending it inwards about 400 feet to the pond.

Work of construction was in progress October 22 to November 24.

SOUTH LAKE.

South lake, Lakevale, Antigonish county, is situated on the western side of St. George's bay, about mid-way between the entrance to Antigonish harbour and Cape George.

It is a large sheet of fresh water, fed by two streams, and is about 1 mile in length and $\frac{1}{2}$ of a mile in width, with a good depth of water; it is separated from the bay by a beach of sand and gravel, about 900 feet in length, 300 feet in width and about 8 feet above the level of high water springs.

The sum of \$8,000 was voted for expenditure during 1907-8 to open the lake as a harbour for boats, by cutting a channel 40 feet wide at the bottom to two feet below low water, through the beach, and to protect the northern side of its entrance, by a breakwater 300 feet in length; of the amount voted the sum of \$5,850.53 was expended in procuring the whole of the materials required for the construction of the breakwater.

During 1908-9, the sum of \$6,697.44 was expended in the construction of the breakwater, and in excavating the channel through the beach, down to about two feet above high water.

The breakwater is 300 feet long and 20 feet wide, extending to four feet at low water, and consists of round timber cribwork, creosoted to half tide and close-sheathed on the seaward face and outer end.

Work of construction was commenced on August 22, and suspended on January 25, 1909.

SPRY HARBOUR.

Spry Harbour, Halifax county, is the eastern arm of Spry bay; it is well sheltered, free from ice, and close to the route of the steamer making weekly trips between Sheet Harbour and Halifax. Around the harbour, within a radius of two miles, there is a population of about 200, chiefly engaged in fishing and farming.

In 1908-9, the sum of \$740.74 was expended in the construction of a small public wharf, which was not quite completed.

Spring tides rise about 6 feet.

The work was begun October 20, and suspended November 6, 1908.

SUMMERVILLE.

Summerville, Hants county, is a village of some 400 or 500 people, situated on the right or east bank of the Avon river, about midway between Windsor, the county town, and the mouth of the river, where it empties into the Basin of Minas.

In 1908-9, the sum of \$392.95 was expended in the renewal of flooring of wharf and in general repairs, including new fenders and guard timbers.

Work was begun August 1, and completed August 19, 1908.

TANCOOK.

Tancook, is the largest of a host of small islands in Mahone bay, on the coast of Lunenburg county. It is about $2\frac{1}{2}$ miles in extreme length, north and south, by a mile in width, east and west. It is 9 miles northeast of the town of Lunenburg, the same distance southeast from Chester and about $2\frac{1}{2}$ miles southwest of the Aspo-

9-10 EDWARD VII., A. 1910

togen peninsula, which is the nearest mainland. The island has a population of about 600, for the most part dependent on fishing but doing a considerable amount of farming in the way of raising early vegetables.

In 1908-9, the sum of \$21,036.42 was expended in building, by contract, a break-water in South East cove, for the protection of the fishing fleet. The work is 330 feet long, 30 feet wide and, at the outer end, 21 feet high. Up to half tide, or about 3 feet above L.W.O.S.T., the whole of the timber is creosoted as a protection against the limnoria.

The work was begun July 1 and completed September 18, 1908.

Spring tides rise 6 feet.

TANGIER.

Tangier, Halifax county, is a thriving settlement with a scattered population of some 500 or 600, situated at the head of Tangier harbour, 60 miles east of Halifax. In the neighbourhood are extensive gold areas, famous for having produced the largest nugget (27 ozs.) ever found in Nova Scotia.

In the year 1907-8, the sum of \$2,080.89 was expended in the construction of a block and span wharf. The following year, 1908-9, the sum of \$628.02 was expended in completing the road approach. The work as completed, consists of a rock and earth approach, 80 feet long, 25 feet wide, and a block and span wharf, 120 feet long and 25 feet wide. There are four blocks, 20 by 25 feet, with a height of 13 to 22 feet and four spans of 10 feet each.

The work was begun October 16 and completed October 31, 1908.

Spring tides rise about 6 feet.

THREE FATHOM HARBOUR.

Three Fathom Harbour, Halifax county, is an irregular shaped inlet of the sea, about 1 mile in maximum length from north to south, by one-quarter to three-quarters of a mile wide, situated about 15 miles east of Halifax harbour. The harbour is much frequented and used by fishermen from the contiguous settlements of Seaforth and East and West Chezzetcook, containing, in the aggregate, a population of some 500 and 600.

To prevent the sea from breaking through the narrow shingle beach, that separates the harbour from the Atlantic, the department, in 1878, constructed cribwork along the crown of the beach. Its original length of 1,050 feet has been extended to 1,035 feet, its height is from 4 to 8 feet and its width 13 feet. It is built of round-log cribwork, fendered and ballasted.

Between the years 1901 and 1908, several expenditures were made by the department in renewals and repairs. In 1908-9, the sum of \$1,998.56 was expended in taking down and rebuilding a portion of the old work, 300 feet long, 12 feet wide and of an average height of 8 feet. The whole work was substantially built of round-log cribwork.

The work was begun September 1, 1908, and completed March 9, 1909.

Spring tides rise $6\frac{1}{2}$ feet.

TONEY RIVER.

Toney river, Pictou county, is a small stream emptying into the Northumberland strait, about midway between Pictou harbour and Amet Sound.

During the years 1905-6 and 1906-7, the sum of \$5,312.85 was expended in opening a new channel through a beach obstructing the entrance, and in constructing protection works. The protection works constructed on the east and west sides were respectively: 206 feet and 146 feet in length, and 14 feet in width, except the outer 32 feet on each side which were 20 feet in width. The piers are 35 feet apart and are each 10 feet in height from $1\frac{1}{2}$ feet below to $8\frac{1}{2}$ feet above extreme low water.

SESSIONAL PAPER No. 19

The depth at extreme low water, in the channel between the piers and outside, for a distance of 50 feet, was $1\frac{1}{2}$ feet.

Spring tides rise 6 feet.

After the completion of the protection works, in 1906-7, the sum of \$972.72 was expended out of the appropriation for that year in procuring most of the materials required for proposed 40 foot extensions of the protection works.

In 1907-8, the sum of \$758.05 was expended in constructing the 40 foot extensions for which the materials were procured in 1906-7.

During the fiscal year 1908-9, the sum of \$1,793.02 was expended in extending the protection works 50 feet.

Work was commenced October 8, and completed December 3.

TRACADIE.

Tracadie Harbour, Antigonish county, is on the southern shore of St. George's bay, 11 miles west from the northern entrance to the Strait of Canso.

The works here consist of a breakwater on the eastern side of the entrance to the harbour, and of a retaining wall, in extension of the breakwater inwards and along the beach to the southward of it, to prevent scouring and undermining of the bank by tidal currents.

The breakwater extends a distance of 120 feet out to the edge of the channel, thence along the line of channel, outwards a distance of 100 feet. The latter section is constructed on the remains of old work; it is 16 feet wide, for a distance of 64 feet, and 20 feet wide, for a distance of 36 feet, and is constructed of round timber with creosoted timber sub-structure.

During the fiscal year 1908-9, the sum of \$1,199.67 was expended in constructing a 260 foot extension inwards of the retaining wall on the southern side of the breakwater.

Work of construction was commenced October 12, and completed November 30.

TROUT COVE.

Trout Cove, Digby county, is a small indentation, about 1,000 feet long and 600 feet deep, on the Bay of Fundy coast of Digby Neck. It is about midway, and has the only breakwater affording shelter to fishing boats, between Digby Gut and Petit Passage, being 18 miles southeast from the former. The settlement at and near the cove, which is called Centreville, has a population of about 300 people engaged in fishing and farming.

In 1908-9, the sum of \$299.92 was expended in general repairs to the breakwater, consisting of new fenders, mooring-posts and flooring. On the seaward face, several logs were renewed and a number of cross-ties inserted.

The work was begun October 5, and finished October 24, 1908.

Spring tides rise 6 feet.

TUPPERVILLE.

Tupperville, Annapolis county, is a small agricultural settlement on the left or south bank of the Annapolis river, 10 miles east of the county town of Annapolis. It is a station on the Dominion Atlantic Railway. Within a radius of a mile is a population of some 400 or 500, almost exclusively engaged in farming and fruit raising.

Some forty years ago, a small wharf of cribwork was built by the inhabitants, who formed themselves into a company for that purpose. The structure is still in existence, but dilapidated and in a dangerous and inconvenient place, being situated in the mouth of a narrow creek entering the river at this point.

In 1908-9, the sum of \$1,275.31 was expended in the purchase of materials for the construction of a public wharf.

Spring tides rise about 28 feet.

9-10 EDWARD VII., A. 1910

UPPER PROSPECT.

Upper Prospect, Halifax county, is a fishing village of about 400 or 500 people, situated on the Atlantic coast, 20 miles west of the city of Halifax. The annual catch, according to the report of the Marine and Fisheries, is valued at about \$14,000; one hundred boats and one hundred and fifty men being engaged in the industry. The harbour is much exposed to seas from the south and southeast.

In 1908-9, the sum of \$3,236.98 was expended in the construction of a small break-water for the protection of the fishing fleet. The work, which is substantially built of cribwork of the usual type, is 120 feet long, 30 feet wide and from 4 to 12 feet high, provided with a break on the seaward side.

The work was begun October 1, and suspended December 8, 1908.

Spring tides rise about 6 feet.

WALLACE.

Wallace is a scattering settlement or village, situated on Wallace bay, which runs inland a distance of 11 miles from Malagash Point. The people, who number about 1,000, are engaged in farming, fishing and quarrying.

The village of Wallace is situated on the south side of this bay, while on the north side of the bay the settlements of North Wallace, Fox harbour and Gulf Shore are located. Prior to confederation, the Nova Scotia government constructed a small wharf on the north side of this harbour, for loading purposes, which wharf has been repaired several times since by our department.

In the year 1897, the department constructed another wharf on the south side of the harbour. A steam ferry was established between these two wharfs and a channel was dredged out, so that ferriage between the two sides of the harbour could be conducted at all times of tide. This dredging soon filled up, and in the year 1905 we began operations, having in view the extension of both of these wharfs to the main harbour channel. In the fiscal year 1905-6, we expended \$10,193.82; in the fiscal year 1904-5 we expended about \$4,850; in the fiscal year 1906-7 we expended \$2,500; and during the fiscal year 1907-8 we expended \$1,450 upon this work.

We extended the wharf on the north side a distance of 1,440 feet, 1,420 feet of which consists of pile trestle bents, situated 10 feet apart, with a common width of 16 feet on top; the last 20 feet is 40 feet wide on top and is constructed of round log, stone-filled cribwork.

The south wharf was extended a distance of 223 feet, being 20 feet wide on top, and has a height of 14 feet at the outer end. This extension is constructed of continuous round log, stone-filled cribwork, well fastened and fendered. Solid cribwork was used in this extension, because it was located in the position of the old dredging, which cut had completely filled up with a soft mud or salt, the material would not support pilework, and indeed so soft did it prove that the cribwork settled in it from 4 to 6 feet.

Of the amount expended in 1907-8, about \$450 was paid out to meet an over-expenditure of the previous year. The remaining \$1,000 was expended in constructing a ferry slip, 60 feet in length and 12 feet width, and a protecting pier 35 feet in length, 8 feet wide and 14 feet high, which latter work was built of regular cribwork. Some of the planking of the old work was renewed out of this amount.

During the last fiscal year, the sum of \$1,977.93 was expended in renewing the coverings of both of the old wharfs, and, on the north side, the top of the old work.

Work was begun here September 1, and continued until December 11, 1908.

Spring tides rise 6 feet; neaps, $4\frac{1}{2}$ feet.

WALLACE BRIDGE.

Wallace Bridge is a scattering farming settlement of about 200 people, situated about 2 miles from Wallace harbour. In former years there had been an old wharf,

SESSIONAL PAPER No. 19

which had been constructed by the inhabitants and used for landing purposes, and which had fallen into thorough decay.

During the last fiscal year, the sum of \$1,500 was voted for the purpose of constructing a new wharf on this site.

The wharf follows the edge of the channel, running almost at right angles from the bridge, at the highway, towards the harbour. The first portion is a stone bank, 11 feet high, running to an old crib, the ballast of which was purchased. The rest of the old crib was worthless and was replaced with 85 feet of cribwork, which is about 15 feet high at the outer end and 20 feet wide on top, with the exception of 30 feet of its length, which is 40 feet wide.

The work was begun here October 7, and continued until November 30, of the same year.

Expenditure for fiscal year was \$1,315.54.

WASHABUCK CENTRE.

Washabuck, Victoria county, is a district on the southern side of the eastern end of St. Patrick's channel, an arm of the Bras d'Or lakes, and extends about 6 miles along the shore. The central part of the district is called Washabuck Centre.

During the last fiscal year, the sum of \$199.98 was expended in raising the guard timbers a height of 20 inches on the channel face of the outer block and around its outer corners, for a distance of 10 feet, and in slight repairs to the inner end of the shore abutment of the wharf.

The work was commenced on July 15, and continued to August 27, 1908; it was resumed on 4th, and completed on November 13, 1908.

WEST BERLIN.

The sum of \$249.69 has been expended during the last fiscal year, in repairing beach protection at West Berlin, chiefly in replacing ballast dislodged by moving ice and high tides.

WESTERN HEAD.

Western Head is a post settlement in Queen's county, 5 miles from Liverpool, on the Halifax and Southwestern Railway.

During the last fiscal year, the sum of \$1,870.35 was expended in repairing a breach made by the heavy seas in the breakwater.

WEST HEAD.

This headland on Cape Sable island, is situated about 2 miles from Clarke's Harbour. It is at the southwestern end of Barrington passage and an important fishing section of this island. Owing to its situation, it would prove to be the most convenient and easiest point of approach for the coasting steamers, which require the use of the several small ports of call on this island. As it lies, however, in such an exposed position, it was necessary to construct a wharf, which not only would accommodate the shipping, but would be a breakwater and thus adequately protect whatever shipping or boats that might be loading or lying along its sides. The Department, during the fall of 1906, began the construction of a breakwater which was continued in the summer of 1907, during which latter period the sum of \$5,000 was expended.

The proposed work, when completed, will consist of a rock bank approach, 95 feet in length, 24 feet wide on top, and 10 feet high at the outer end, and a wharf proper 210 feet in length, 20 feet wide on top, with the exception of the last 40 feet, which will be 50 feet wide on top. The work, with the exception of the approach, is being constructed of continuous crib-work of the usual style. There will be from 13 to 15 feet of water, at the outer end, at L.W.O.S.T.

9-10 EDWARD VII., A. 1910

During the past fiscal year, the sum of \$989.21 was expended in the construction of the top, about 125 feet long, of the breakwater, and the partial construction of about 8 feet in height of the head, which is 50 feet long and 50 feet wide.

Spring tides, 12 feet; neaps, 9 feet.

Work was commenced August 24, and completed November 9, 1908.

WEST PORT JOLI.

Port Joli is a post village on an inlet of the Atlantic, in Queen's county, 14 miles from Liverpool.

During the last fiscal year, the sum of \$3,000.03 was expended in constructing a breakwater consisting of 218 feet of solid cribwork, fully ballasted, 20 feet wide and 14 feet high, at the outer end, and of a rock bank, 105 feet in length and 24 feet in width.

Work was commenced August 17, and completed November 12, 1908.

WHITE POINT.

The sum of \$150 was expended in clearing out the dock, on the inside of the breakwater, at this place, which had been filled up with stones, washed over by the heavy storms of the past two or three years. The work consisted in the removal of about 125 tons of loose rock; it was commenced on June 9, 1908, and continued until March 28, 1909.

WHITNEY PIER.

Whitney Pier, Cape Breton county, is a residential and business district on the eastern side of the southwest arm of Sydney harbour, near the Dominion Coal Company's shipping pier, and within the limits of the city of Sydney.

A contract was entered into on November 30, 1908, for the construction of a wharf, to extend 620 feet to 11 feet at extreme low or to 16 feet at extreme high water. The work under contract is to consist of an abutment, 40 feet in length and 20 feet in width; two shore blocks, each 20 feet by 20 feet, connected with each other and with the abutment by spans of 15 feet; 486 feet of pile work, 20 feet in width, and an outer block, 24 feet in line of work by 40 feet.

Construction was commenced about October 15, and continued up to December 4, when operations were suspended for the winter. On suspension of operations the abutment and the two shore blocks were in place, and up to within two feet of required height.

The expenditure during the last fiscal year amounted to \$775.91.

WINDSOR.

Windsor, the county town of Hants, with a population of 4,500, is an important town, situated at the head of the estuary of the River Avon, on the Dominion Atlantic railway, 46 miles northwest from Halifax. The shipping registered at this port for the year 1896 amounted to 131,000 tons. In the neighbourhood are extensive quarries of gypsum, of which about 120,000 tons are annually shipped to the United States. Some two or three million feet of lumber b.m. are annually exported by water.

In 1908-9, the sum of \$400 was expended in repairing the outer end of the training weir, which had been damaged by heavy ice the previous winter. Work was begun on September 23, and completed on October 21, 1908.

In 1908-9 also, the sum of \$5,046.22 was expended in the removal, by hand-digging, of a quantity of mud from in front of the railway wharf. Work was begun June 8, and completed September 24, 1908.

Spring tides rise about 40 feet; neaps, 36 feet.

SESSIONAL PAPER No. 19

WOLFVILLE.

Wolfville, Kings county, is a town of about 1,000 inhabitants, situated on the right bank and near the mouth of the Cornwallis river, which issues into the Basin of Minas, at its southwest corner. It is an important station on the Dominion Atlantic Railway, 64 miles from Halifax, 66 miles from Annapolis and 7 miles east of Kentville, the county town of Kings.

In 1908-9, the department expended the sum of \$300 in repairing and strengthening, with additional piles, the bed in front of the public wharf when loading or discharging at low water.

Work was begun July 15, and completed August 28, 1908.

Spring tides rise 48 feet; neaps, 40 feet.

YARMOUTH BAR.

Yarmouth bar. In 1867 it was found that part of the beach between Cape Fourchu and Stony Point was gradually wearing down, and unless the action was arrested the sea would eventually sweep away the beach and destroy the harbour.

The government of Nova Scotia began the work of protecting the beach in 1867, constructing 200 feet of cribwork at Stony Point; between 1873 and 1875, the Public Works Department constructed the remaining 2,800 feet of protection work to reach Cape Fourchu, and added buttresses or groynes to stop the movement of the gravel.

In 1875-6, the protection works, badly built of stone-filled cribwork and close-piled on their seaward faces, had to be repaired and strengthened, the expenditure amounting to over \$25,000.

During the year 1896-7, the sum of \$2,983.62 was expended in carrying on the most urgent works of repair and, yearly since, expenditures have been incurred to maintain and improve the protection works, details of which may be found in the annual report for 1907-8.

In 1908-9, the sum of \$1,003.76 was expended in taking down and rebuilding 75 feet in length of the middle portion of the beach protection work that was very much dilapidated. Repairs were made to several portions of the floor of the work. Work was begun on October 1, and completed November 21, 1908.

PRINCE EDWARD ISLAND.

BAY FORTUNE.

Bay Fortune Harbour, Kings county, is situated on the east coast of the island, about 5 miles southwest from Souris, the eastern terminus of the Prince Edward Island Railway, and about 15 miles northeast of the entrance to Georgetown harbour.

During the last fiscal year, the wharf on the north side and its approach having become quite unserviceable for traffic, the work of reconstruction and renewal of the floor-stringers and covering of pier-head was commenced on October 12, and completed November 30, at a cost of \$497.39.

BAY VIEW.

Bay View pier, Queens county, is situated on the eastern side and near the mouth of the Hope river, that enters New London harbour, about $3\frac{1}{2}$ miles southeast of the harbour's entrance. The pier, which is one of those, the control of which was assumed by the Dominion government in 1883-4, is 509 feet in length; the 409 feet outwards from the shore being from 18 to 20 feet in width, it then increases gradu-

9-10 EDWARD VII., A. 1910

ally to a width of 35 feet at the outer end, where a depth of 10 feet is carried, at low water spring tides, or of $14\frac{1}{2}$ feet, at H.W. spring, that rise $4\frac{1}{2}$ feet.

The work done during the last fiscal year consisted in repairing the roadway and replacing ballast on pierhead.

The expenditure amounted to \$194.60.

BELFAST PIER.

Belfast Pier, Queens county, locally known as 'Halliday's wharf,' is situated on the south side of Orwell bay, about one mile from the village of Eldon.

It was constructed by the government of Prince Edward Island, previous to confederation and is one of the Prince Edward Island piers taken over by the federal government in 1883; besides affording shipping facilities for the neighbourhood, it is also the port-of-call for a passenger steamer plying, during season of navigation, by-weekly between Charlottetown and other ports on Orwell bay, &c.

During the last fiscal year, the work done, which was commenced on October 1, and completed by the 28th day of November last, was the making up and repair of the roadway approach, sides of which were fenderpiled; renewal of plank side walk; ballasting of pier head, part planking, fendering, &c. Amount expended, \$1,210.18.

BELLE RIVER.

The harbour, which is formed at the mouth of the river, is situated on the south side of the island about 4 miles west from Wood islands and 6 miles eastward of the mouth of the Pinette river.

During the last fiscal year, 110 feet of the sloping face of the south breakwater and 25 feet of the north breakwater have been repaired and strengthened, as far as possible, sufficiently to place it in safe condition.

Total expenditure, \$268.07.

CHAPEL PIER.

Chapel Pier, Kings county, is on the south side of Grand river, about 3 miles from its entrance into Boughton bay, and 9 miles from Cardigan station, on the line of the Prince Edward Island Railway.

During the last fiscal year, the sum of \$210.88 was expended in procuring materials required for the renewal of fender and close-piling of the pier and general repairs to roadway approach.

CHARLOTTETOWN.

During September last, being commenced 1st and completed 15th, a warehouse, 30 by 24 feet, with 8 feet posts, was constructed, at a cost of \$528.98, near inner end of the Marine and Fisheries wharf, for the storage of plant, &c.

CRAPAUD PIER.

Crapaud pier, Queens county, is situated at the head of navigation of the Crapaud basin, at 'Victoria Village,' which, next to Summerside, is the most important place for shipments on the southwestern coast of the island; it is about midway between Charlottetown and Summerside harbours, and about 11 miles distant, south, from Emerald junction on line of the Prince Edward Island railway.

During the past season, the sum of \$256.86 has been expended in effecting repairs to planking on pier head; putting in fender piling; lowering slip, and enlarging and repairing warehouse, the work being commenced September 22, and completed October 23.

SESSIONAL PAPER No. 19

GRAHAM'S POND.

Graham's pond, Kings county, is situated on the east coast of the island, about 5 miles south of the entrance to Cardigan bay, and about the same distance north of Murray harbour. The pond has a length of about half a mile and a width of from 600 to 800 feet, carrying, in the body of the pond and a short distance from the entrance, a depth of from 5 to 7 feet of water, at ordinary pond level.

During the past season, the sum of \$1,000.16 was expended in extending the south pier a further 30 feet (this with width of 20 feet), the work built being of a most substantial character as the situation is a very exposed one; the outer end of the northern pier and other parts of the works were strengthened by fender-piling, &c. The work was commenced September 5, and completed October 12.

HICKEY'S.

Hickey's wharf, Queens county, is situated on the southern side of the East or Hillsborough river, about 10 miles from Charlottetown, and was constructed by the local government many years before confederation. It is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884, and is 428 feet long and from 22 to 30 feet wide.

During the past season, partial reconstruction of the top of the pier was effected. The expenditure for making up floor-stringing, covering, fender-piling, &c., on a length of 100 feet of the outer part, and general repairs on the remainder of the work is \$1,350.96. Work commenced October 3, and completed November 23, 1908.

HIGGIN'S SHORE.

Higgin's Shore pier, Prince county, is situated on Egmont bay, about 10 miles north from Cape Egmont, and about 6 miles west from Richmond station, on the line of the Prince Edward Island Railway. The pier, which was constructed many years ago by the provincial government, is one of the Prince Edward Island piers, control of which was assumed in 1884-5 by the Dominion government.

In 1906, the department began the reconstruction, on an average of 3 feet in height, of the face-timbers, over the full length of the work on both sides, while the end was rebuilt from about the bottom; longitudinals and cross-ties, as required, being put in, and roadway made up with broken stone and gravel.

During 1907, an extension of 55 feet was made, consisting of a solid close-faced timber block, 40 by 35 feet, placed 15 feet distant from the outer end of the old pier.

During the past season, a similar extension of 65 feet was built at a cost of \$1,680.83, this to reach a further depth of about one foot of water. Work was commenced on September 21, and completed by October 31, 1908.

HURD'S POINT.

Hurd's Point pier, Prince county, is situated on the southern side of Bedeque or Summerside harbour, about 3 miles south of Summerside, the shire-town of the county. The pier is a most important shipping point, being about the only outlet for the surplus produce of a large and well cultivated rich, agricultural district; it is also the regular calling place of the ferry steamer plying in the harbour and which makes several trips daily between it and Summerside. The pier is 500 feet in length and 26 feet width, excepting on the outer end or pier-head, where, for a length of 50 feet, it has a width of 65 feet.

During the past season, reconstruction was made of a length of 220 feet of original close-timber work face of the shore abutment, that had become entirely decayed and broken down, the roadway, as well, formed of broken stone and gravel, was made up and put in best of order. The work was commenced October 7, and completed November 30, 1908, at a cost of \$652.77.

9-10 EDWARD VII., A. 1910

LEWIS POINT.

Lewis Point pier, Kings county, is situated on the north side of the Cardigan river, a short distance below Cardigan bridge, the head of navigation, and about 6 miles from the entrance of the river into Cardigan bay. The pier is 575 feet long, being composed of a shore abutment 365 feet in length, two intermediate blocks, each 35 feet long, and an outer block, 79 feet in length, with intervening spans, each about 20 feet wide, out to the outer block which is about 33 feet wide.

The outer part, owing to decay of covering and floor-stringers, having become unsafe, their repair was effected during the past fall, at an expenditure of \$567.91: the pier-head was also covered with two-inch planking laid transversely over that in place. The work was commenced September 1 last, continued during all of that month, resumed October 17, and completed November 2.

MIMINEGASH.

Miminegash Harbour, Prince county, is situated on the northwest coast of the island, about 15 miles from North Cape, and 18 miles from West Point.

The sand break, 230 feet long, built on the north side of the north breakwater having settled on the average of about 3 feet and its levelling up being desirable, this was effected during the past fall; a length of 150 feet of the north breakwater was also raised about $1\frac{1}{2}$ feet, newly floor-stringered and covered; a brush beach protection, 200 feet long, was built on the south side, and 170 feet of breastwork repaired, rebalasted &c., the cost of all of which was \$1,468.42. Work was commenced on September 17 and completed November 21.

MOUNT STEWART.

Mount Stewart wharf, Queens county.—Mount Stewart village is situated at the head of navigation of the East or Hillsborough river, about 18 miles east of Charlottetown; it is the junction of the Souris and Georgetown branches of the Prince Edward Island railway.

During the last fiscal year, the department purchased a wharf for \$550 and its reconstruction was effected, at a cost of \$2,235.68.

The wharf has a pier head, 80 feet long by 34 feet wide; with an approach in two sections, respectively 90 and 70 feet long, and a roadway, 33 feet wide and about 300 feet long, was also acquired.

MCPHERSON'S COVE.

McPherson's Cove, Kings county, is on the south side Grand river, a short distance inward from what is known as "Morrison's Beach," which separates Grand River from Boughton bay, and has a length of nearly a mile, extending in a northerly direction to opposite Annandale village.

The department, in 1904-5, constructed a wharf, in all 700 feet long, at that place; as the wharf, however, did not reach the channel, it was, during the past season, extended 200 feet and some dredging done along the sides of the pier head, giving a depth of from 7 to 10 feet, at low water or of 11 to 14 feet at H.W. springs, which rise 4 feet. The cost of the extension, including dredging, &c., was \$4,619.90. Work was commenced February 26 and completed on July 29.

NEW LONDON.

New London harbour, Queens county, is on the northern coast of the island about 10 miles east from the entrance of Richmond bay, and 9 miles west from Rustico harbour.

SESSIONAL PAPER No. 19

During the past season, the sum of \$633.96 was expended in reconstructing a length of 200 feet of the eastern breakwater; repairing and ballasting of portions where washout and settlement had occurred, as also the securing of the sheathing, &c., of outer block. Work was commenced September 7, and finished November 7.

NINE MILE CREEK.

Nine Mile Creek, Queens county, is situated about 6 miles west from the entrance into Charlottetown harbour, on the shallow inlet between St. Peter's island and the mainland.

During the last fiscal year, the covering, floor-stringers, guard timbers and fenders of the pier were repaired, at a cost of \$650.57. Work was commenced October 19 and completed November 7.

NORTH CARDIGAN.

This pier is situated on the north side of the Cardigan river, about 5 miles from Cardigan bridge, and is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884.

During the past season, general repairs were effected to the filling-in of the three outer spans of the pier, at a cost of \$80.84. Work was commenced September 22, and was completed on October 7.

PORT SELKIRK.

Port Selkirk pier, Queens county, is situated on the south side of the Orwell river, near its entrance into Orwell bay, and is distant by water about 20 miles from Charlottetown.

The pier, which is in the form of a 'T,' consists of a pier-head 250 feet long and 35 feet wide, fronting on the edge of the channel, and an approach 250 feet long by 23 feet wide.

Work was commenced on the 3rd day and completed 21st day of October, 1908.

ROBINSON'S ISLAND.

Robinson's Island breakwater, Queens county, is situated on the eastern side of the entrance to Rustico harbour at the western end of Robinson's island, which extends in an easterly direction, about 3 miles to Little Rustico harbour.

During the last fiscal year, work was done in renewing the filling of the breakwater. Work was commenced on 1st and completed on 23rd October, 1908.

RUSTICO HARBOUR.

Rustico Harbour, Queens county, is on the north side of the island about midway between East Point and North Cape, and is one of its most important fishing stations. For improvement of its approach, which is obstructed by a shifting sand bar, the department, during 1881-2-3-4, constructed a breakwater on the north side of the entrance for the purpose of confining the current at ebb tide, and by scour, thus deepen the water, besides forming protection to the low beach on which most of the fishing stages and houses of the fishermen are situated.

The work originally 1,240 feet long, being, on the outer part, of solid close-faced timber work, and, for the inner 500 feet, of pile, brush and stone work. The piles in this latter having become decayed were unable to withstand the severe storms and high tides that occurred 1st to 13th November, 1906, and a length of 400 feet, at its inner end, was completely carried away, endangering the safety of the fishing stages and houses and there being danger of a channel being formed through the beach, temporary repairs were effected at once by constructing a breastwork of brush, poles and ballast which accumulated the drifting sand and made up the beach to such an

9-10 EDWARD VII., A. 1910

extent that, notwithstanding the further storms that occurred later that winter and following spring, little further expenditure was required to secure that part of the work. Its outer end, however, had also suffered severely, portions of the sheathing and stringers having been carried from off the sloping face, permitting washout of ballast; most of the fendering and some of the face-timbers on the inner faces as well being destroyed, latter, owing principally to age, being the original ones placed in the work in 1884, when first constructed, had to be repaired and reconstructed, which was done during fall of 1907.

Damage again having occurred to parts of the work, the breakwater built on the north side of the harbour, owing to its exposed situation and ravages of the teredo, it was necessary, during the past season, to repair some of the ballasting, covering, &c.; which has been done at an expenditure of \$741.11. Work was commenced October 21 and completed November 16, 1908.

ST. MARY'S BAY.

St. Mary's Bay pier, Kings county, is situated on the southern side of St. Mary's bay and was constructed many years ago by the provincial government, being one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884.

It is in all 407 feet long, and, for a distance of 310 feet, 21 feet wide, its outer 97 feet being 29 feet wide.

During the past season, the sum of \$502.58 was expended in filling in the outer span, repairing roadway approach, where washout and settlement had occurred, and renewing all defective planking, &c., on the pier-head.

ST. PETER'S BAY.

St. Peter's Bay, Kings county, has its entrance from the Gulf of St. Lawrence, about 35 miles west from East Point. The bay is of considerable extent, running inland about 8 miles, with the average width of three-quarters of a mile, and carrying depth of from 2 to 3 fathoms at low water.

The matter of improving the entrance having again been taken up by the department, a contract was entered into August 3, 1905, for the construction of a work, 900 feet in length, to extend from the end of the east beach towards the outer end of the western work; this first contract was completed by October 12, 1907, warranting a further extension.

A contract for a length of 500 feet was entered into with Messrs. Cox & Webster, October 30. A second contract was entered into, in the sum of \$13,500, for the construction of a further extension, 500 feet long. Work was commenced May 25, 1908, and continued without interruption until completion, on November 26. Some slight repairs were also effected to the western breakwater. Total expenditure, \$13,975.

SOURIS.

Souris harbour, Kings county, is situated on the southern coast of the island, about 16 miles west from East Point; it is important as a harbour of refuge and place of shipment, for which it has been made available by the breakwater, built and maintained by the Dominion government. This work, which was commenced in 1875, has now a length of 1,250 feet. For several years past, repairs of the protection slope on seaward side have been in progress, and these, during the past season, were continued, some 1,115 cubic yards of large sized stone being put in at a cost of \$1,234.26.

The work was commenced August 18, and continued at intervals, up to November 10, when it was discontinued owing to conditions of weather.

SESSIONAL PAPER No. 19

SUMMERSIDE.

Summerside Harbour, Prince county, is on the southern coast of the island, of which it is the second place in importance for shipping, &c. The town of Summerside is next in population to Charlottetown, having some 3,000 inhabitants; it is, as well, one of the principal stations on the line of the Prince Edward Island railway, by which, distant from Charlottetown 49 miles, and from Tignish, the western terminus, 68 miles.

During the season of navigation, daily communication is had with the mainland by the steamers of the Charlottetown Steam Navigation Company, Ltd., at Point du Chene, where connection is made with the Intercolonial railway and so with all parts of Canada and the United States.

The entrance into the harbour between Indian Head and Phelan Point is about $1\frac{1}{2}$ miles wide, a sand spit, however, partially dry at low water, extends about 3,200 feet from Indian Head, while the water is also shoal for a distance from the opposite shore, so that the deep water channel, carrying 18 feet of water or better at L.W.S. tides, is only about 500 feet wide opposite the lighthouse, situated on the north side of the sand spit outward of Indian Head; inward of this the channel to the railway and other wharfs at the town is from 400 to 1,200 feet wide and has a depth of from 23 to 30 feet at L.W.S. tides.

For the improvement of the channel, as to depth and direction, dredging has been done at different times by the department, while, for protection from southwest winds, a contract was entered into February 27, 1906, for the construction of a breakwater, to extend 3,220 feet from Indian Head to the outer side of the sand spit on which the lighthouse is situated.

Construction was commenced early in May, 1906, and continued up to about the middle of November of that year; the work done was the building partly to height and placing in position, ballasting, &c., of a length of about 700 feet of the cribwork core; some rip-rap being also placed.

Work was resumed May 1, 1907, and continued up to the end of November of that year, during which time the outer creosoted block was completed, with the exception of the deck plank and some little ballasting.

Work was again resumed May 1st, 1908, and good progress made up to December 15, the crib-work having been put in and secured over the full length and rip-rapped, excepting on length of 400 feet.

The total expenditure during the last fiscal year amounted to \$74,804.

TIGNISH.

Tignish harbour, Prince county, is on the northeast coast of the island, about 8 miles south of North Cape, being situated at the mouth of the Tignish river, a small stream that enters the Gulf of St. Lawrence.

During the past season, an expenditure of \$977.20 was made in general repairs to the north breakwater, the work being commenced on August 28, and completed on September 29.

WEST POINT.

West Point, Prince county, is situated on the north side of Egmont bay and eastern shore of Northumberland strait, about 14 miles from O'Leary station, on the Prince Edward Island railway, and about 35 miles, by water, from Summerside harbour.

The wharf was originally one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884; it had been built many years before confederation by the provincial government to give some shipping facilities to the district, there being no wharf or shipping place at the time between Summerside and North Cape where vessels of any size could call, a distance of about 60 miles.

9-10 EDWARD VII., A. 1910

West Point being midway was considered a favourable site and the work is said to have proved of much benefit until it was seriously damaged on the breaking up of ice in the spring of 1884, from which time it remained in bad condition until 1898, when it was thoroughly repaired by the department; the wharf at the time had a length of 620 feet with width of 30 feet and extended out to a depth of about 7 feet at low water or of 11 feet at high water spring tides, that here rise 4 feet.

For the purpose of obtaining a better depth of water, a contract was let in 1900, for an extension of 100 feet in length, this also 30 feet wide, extending out to a depth of 9 feet at low water when completed in 1901, it has since, however, shoaled to a depth of about 7 feet at low water on a bar that has to be crossed for its approach. Some settlement occurred in the outer part of this 100-foot extension, built in 1900, levelling up of which was effected during the spring of 1905, portions of the sides, as well, being close-piled.

During the summer of 1907, when repairs were effected on an inner part of the wharf, 175 feet of which had been damaged by the running ice that spring, it was also intended to close-fender-pile the outer 200 feet that had become weakened by action of the teredo.

During the past season, this has been done at a cost of \$1,074.89, the work being commenced September 16, and finished November 26, 1908.

WOOD ISLANDS.

Wood islands, Queens county, are situated about 30 miles from Charlottetown, in a southeasterly direction, about 15 miles westward from Cape Bear, and are the most southerly part of Prince Edward Island.

During the past season, an additional jetty, 50 feet long by 20 feet wide, averaging 15 feet high, has been built, extending from near outer end of southern work and narrowing the channel to 100 feet in width. Work was commenced September 22, and completed December 5, 1908, during which period the expenditure amounted to \$15,597.22.

PROVINCE OF NEW BRUNSWICK.

ANDERSON'S HOLLOW.

Anderson's Hollow, Albert county, is a cove of Salisbury bay, on the north-west side of Chignecto channel, in the Bay of Fundy. Spring tides rise $40\frac{1}{2}$ feet; neaps, $32\frac{1}{2}$ feet.

During 1908-9, one mooring post, four fenders, one cap timber, 27 feet long, seven knees, five crooks, twenty pieces of sheathing and ten pieces of covering were placed in the wharf. The road approach was repaired with brush, stone and gravel, and the upper works were painted with carbolineum avenarius.

Work was commenced on September 22, 1908; carried on during September, October and March, and suspended on March 31, 1909.

The expenditure during 1908-9 was \$280.27.

BEAN AND CROSS LAKES.

These lakes are in Madawaska county. During the last fiscal year, the channel of Cross Lake rapids was cleared for a length of 35 yards and from 25 to 30 feet wide; Bean lake being cleared for a length of 15 yards and from 25 to 30 feet wide.

Work was begun on August 10, and completed on the 28th of the same month; the total expenditure amounting to \$150.

SESSIONAL PAPER No. 19

BEAVER HARBOUR.

Beaver harbour, in the county of Charlotte, situated 35 miles west of St. John, in a direct line, and 7 miles from Pennfield station, on the New Brunswick Southern Railway, is used a good deal by coasting vessels as a temporary anchorage. Spring tides rise 23.5 feet; neaps, 20 feet.

On February 27, 1909, a contract was let for the construction of a pile wharf, consisting of an approach 320 feet long and 25 feet wide, and a pier-head 40 by 60 feet, with a depth of 24 feet on the face at high water, on the site of a former provincial government wharf. Work was commenced on January 14, 1909.

An agreement has been made with the contractor for the construction of a slip, and the placing of pile fenders along the approach. By the end of the fiscal year, the work was nearly completed.

The expenditure during 1908-9 was \$4,998.88.

BUCTOUCHE BEACH.

Buctouche harbour, Kent county, is separated from Northumberland straits by a sand beach, from 6 to 7 miles long. At the southern end of the beach is the entrance to the harbour. The northern end, off which are important fishing grounds, is connected with the mainland.

The inhabitants of the northern end of the harbour were practically debarred from outside fishing by the distance from the village, around by the harbour entrance, to the fishing grounds, and there was no shelter for boats on the outside shore. It was therefore proposed to make a cut through the beach, at its northern end—the narrowest part—the width there being only about 500 feet.

Work was begun in May, 1905, and consisted first of building a stake and brush breastwork, 2,800 feet long, to raise the low parts of the beach, formerly washed by storm tides. A similar breastwork, 306 feet long, was constructed in 1906-7, parallel to the other at the lowest point.

During the fiscal years 1905-6 and 1906-7, two breakwaters were built of piles bolted to walings and cross ties and filled between with brush and stone, to protect the outer end of the cut. The north breakwater is 219 and the south breakwater 143 feet long. A breastwork, 434 feet long, of close piles backed with brush and connected by braces, with piles, 6 feet centre to centre, driven 10 feet in the rear, was built along the north side of the cut.

During 1907-8, this was extended 154 feet at the north breakwater and a similar breastwork was built for a length of 106 feet along the south side of the cut. A breastwork, 160 feet long, of close piles was also built southward from the inner end of the south breakwater, to protect the sand banks which were being carried into the cut by storms.

During the fiscal year ending March 31, 1909, 1,274 piles were driven as extension of the breastworks on each side of the cut, 404 feet long on the south side and 319 feet long on the north side and for a 75 foot extension of the north breakwater. One waling was bolted to the piles for the breakwater and 432 lineal feet to the different breastworks.

The work was in progress intermittingly between August 19, 1908, and March 12, 1909.

CAMPBELLTON.

Campbellton, Restigouche county, is situated on the southern side of the Restigouche river, 16 miles above Dalhousie and 6 miles below the head of the tide. It is an important station on the Intercolonial railway and the terminus of the International railway now under construction. Its population in 1906 was 3,740, against 2,652 in 1901.

9-10 EDWARD VII., A. 1910

In 1907-8, planking was laid between and close outside the rails of the two tracks on the deep water wharf to allow teams to drive and turn on the wharf. The outer face and end, of the Departmental block, built in 1889, was close piled with 87 piles, 40 to 54 feet long, and close piling was begun on the inside face, about 35 piles being driven.

This work was completed early in 1908-9, when about 25 piles, 35 to 48 feet long, were driven. During the fiscal year ending March 31, 1909, 5 mooring posts were also placed and strengthened with hardwood strips, spiked around the sides; 30 loads of bark and 393 loads of gravel were spread over the wharf where settlement had occurred. The tool shed was repaired and moved about 10 feet, to be entirely on the government property.

Work was in progress by day labour, between May 5 and 30, June 18 and August 31.

On May 28, 1908, a contract was entered into for the construction of a deep water wharf extension, 304 feet long and 35 feet wide, to be connected with the easterly end of the present wharf by a span, 15 feet long. Work was begun on December 18, and, by March 31, a crib, the whole length of the work, had been built to a height of from 30 to 32 feet, sunk in place, and filled with ballast. About half the upper ballast floor was laid.

The expenditure during the fiscal year 1908-9 amounted to \$19,964.42.

CAMBELLTON (FERRY LANDING).

During the fiscal year ending March 31, 1909, the slip was widened 25 feet, i.e., to a total width of 60½ feet.

The face of the wharf, at the eastern side of the slip was also repaired by laying 3 tiers of face timbers, 75 feet long, tied in to an interior longitudinal with nine cross ties; 98 close piles, about 15 feet long, were driven and the inner 25 feet of the face was sheathed with 3-inch plank.

CAPE BALD.

Cape Bald lies in a well settled fishing and farming district on the Northumberland Straits, about 14 miles east of Point du Chene, the nearest railway point, and 38 miles west of Cape Tormentine.

During the fiscal year ending March 31, 1909, a right-of-way and site for the proposed breakwater were acquired by the department and a road, 1,450 feet long, was graded. The outer 250 feet was excavated in the sandstone cliffs, requiring the removal of about 1,600 cubic yards of rock. The deepest cutting was 13 feet, the width of road, including ditches, one foot wide, being 20 feet.

The work was in progress between September 28 and October 31.

The expenditure during the fiscal year amounted to \$2,806.56.

CAPE TORMENTINE.

Cape Tormentine is situated on the southwestern side of Northumberland straits, at the extreme eastern end of Westmoreland county. It is the terminus of the New Brunswick and Prince Edward Island Railway, and the nearest point of communication between Prince Edward Island and the mainland—there 9 miles apart.

In 1908-9, thirty-six pieces of 6-inch creosoted sheathing were driven across the shore end of the 'return,' to replace two layers of hardwood sheathing, the lower part of which had been destroyed by the teredo. The ballasting and planking of the pier-head and 'return' were completed, about 2,200 square feet of 4-inch plank and 119 lineal feet of cap timbers being laid. Seven iron straps were placed around the northeast corner of the pier-head. A flat car was purchased from the Intercolonial Railway and on it was erected a derriek and a building to cover the donkey engine;

SESSIONAL PAPER No. 19

this was used in unloading and placing 823 cubic yards of large stone, to raise the slope along the outside face of the 'return' and pier-head. Some 903 cubic yards of small stone were procured.

The work was in progress between April 23 and November 20.

The expenditure for the fiscal year ending March 31, 1909, was \$9,226.60.

CARAQUET.

Caraquet, Gloucester county, is situated on the south side of Bay des Chaleurs, 42 miles east of Bathurst. It is an extensive and prosperous fishing village and settlement, with a population of about 4,000, and with the exception of Bathurst, is the most important station on the Caraquet Railway.

The work done during the last fiscal year, consisted in covering with 6-inch hardwood sheathing the upper end of the ice-breaker, built in 1907, for the protection of the pier-head.

A warehouse, 60 feet 8 inches long and 20 feet 9 inches wide, was built on the pier-head of the wharf. The building is 11 feet high from the floor of the wharf to the eaves and 10 feet from the warehouse floor to the upper joints.

Work was in progress between September 12 and December 31, 1908, and between March 18 and 31, 1909.

The expenditure for the fiscal year ending March 31, 1909, was \$2,786.45.

CHASES POINT.

At Chases Point, Queens county, 5 miles from Gagetown, a low water wharf was constructed of round cribwork, 160 feet long on top, fully ballasted with stone, consisting of a pier-head, 40 by 40 feet on top, battered at the rate of 1 to 10, together with an approach of continuous cribwork, 120 feet long and 20 feet wide on top, battered, on the upper side, at the rate of 1 to 1 and, on the lower, at a rate of 1 in 10, together with a further approach of rock and ballast, 60 feet in length and gravel on top.

Instructions were received for this work on September 19, 1908; work was commenced on October 5, and was suspended on March 31, 1909. This structure is complete, with the exception of placing the fenders on the lower side and one or two on the face.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$1,962.81.

CHATHAM.

Chatham, Northumberland county, one of the chief deal ports of New Brunswick, lies on the southern shore of the Miramichi river, about 20 miles from its mouth. It has a population of about 5,000.

The Custom-house wharf, so-called, an old structure, formerly the Cunard wharf, was rebuilt during the fiscal years 1899-1900 to 1901-2. It has a frontage of 112 feet on the river and two wings, 144 and 171 feet long, all composed of close-faced cribwork, 12 feet wide. The area between the wings is filled with earth and gravel.

During September and October, 1907, a cribwork retaining wall, 52 feet long and 6 feet high, was built at the inner end of the slip on the eastern side of the wharf, and the ground was levelled off and filled in behind it.

The work was continued during the fiscal year 1908-9, when an area about 150 by 125 feet was graded.

The work was in progress between June 17 and July 24.

The expenditure for the fiscal year 1908-9 was \$248.95.

9-10 EDWARD VII., A. 1910

CHOCKFISH.

Chockfish, Kent county, is a fishing and farming settlement at the mouth of the Chockfish river, which empties into Northumberland straits, about midway between Richibucto and Buctouche.

The works at Chockfish are intended to straighten the channel at the mouth of the river, which was formerly obstructed by shifting sand bars, and to render it deep and stable, and thus afford a safe entrance and harbour for fishing boats. They consist of a dam closing the old deflected channel and north and south breakwater. The dam is 356½ feet long. It was begun in 1901-2 and extended in 1902-3. The north breakwater was built, for a length of 516 feet, in 1903-4, and extended 50 feet each year during the fiscal years 1906-7, 1907-8 and 1908-9. The south breakwater, begun in 1904-5, has a total length of 364 feet, of which the outer 50 feet was built during 1908-9. It is a continuation of the dam. An opening, 44 feet wide, is left between the two breakwaters. The outer sections of both breakwaters are 11 feet 6 inches out to out and consists of two rows of main piles, placed 6 feet apart centre to centre, in each row, and connected with cross-ties and walings of square timber. was also close piled in 1908-9, with 14 piles, and filled with brush and stone.

A slight gap between the last extension to the north breakwater and the old work was also close piled in 1908-9, with 14 piles, and filled with brush and stone.

Work was in progress intermittingly between September 7 and November 20.

The expenditure for the fiscal year 1908-9 was \$1,499.95.

DALHOUSIE FERRY WHARF.

Dalhousie, Restigouche county, lies at the head of the Bay des Chaleurs and the mouth of the Restigouche river and 16 miles below Campbellton. It has a population of about 1,200 and is an important deal port. Dalhousie harbour is, during the season of navigation, one of the best in the province, being well sheltered and having a depth of from 4 to 7 fathoms at low water.

A contract for rebuilding and enlarging the old wharf was entered into on November 24, 1907; the contract price was \$9,840.

The work of removing the old block was begun on November 28, 1907, and, by March 31, 1908, the round timber work of the shore block and block No. 1 had been erected to full height; blocks 2 and 9 and the slip were built to different heights up to within a tier of the top. The old timbers of the pier head had been removed down to high tide level and one to three tiers of new timbers were laid over it and the main piles for the enlargement of the pierhead had been driven.

The work was completed on July 21, 1908, and consists of a pierhead, 40.8 by 70½ feet, built partly on the old pierhead and partly on a new pile work addition; a slip for the ferry, 52½ by 16½ feet built with the top sloping at the rate of 1 in 7; 9 blocks, about 20 feet square, and 10 spans of 20 feet—a total length of 374.5 feet; a cribwork approach, 102 feet long and 20 feet wide, and a stone and gravel approach, about 80 feet long by 20 feet wide, with a timber cap resting on cross ties.

In September, 1908, a davit, with fastenings, blocks, and rope complete, was placed on the slip for convenience in handling freight.

The expenditure for the fiscal year 1908-9 was \$6,609.90.

DORCHESTER.

Dorchester, is the shiretown of Westmoreland county, and a station on the Inter-colonial railway, 27 miles southeast of Moncton. Its population is about 1,100. It lies on the eastern side of the Memramcook river about 2 miles above the mouth in Shepody bay.

On January 20, 1908, a contract for an extension to the wharf was entered into, the contract price being \$13,478. The new work is 202 feet long and 52 feet wide

SESSIONAL PAPER No. 19

on top and lies immediately below the railway wharf, but projects 14 feet outside the range of the outside face of the latter.

The extension has a close face of square timber on the outside and lower end. The inside face and upper end are of round timber sheathed with 4-inch plank. The wharf itself is 194 feet long, the upper 8 feet of the work consists of a span connecting it with the railway wharf.

The work was begun on June 3 and completed on December 9.

The expenditure for the fiscal year 1908-9 was \$17,521.13.

DOVER.

Dover is a farming, fishing and lumbering district on the Petitecodiac river, about 10 miles below Moncton. The district is dependent on the river for cheap transportation, the chief connection being with Moncton. Lumber is loaded on scows for shipment at the river mouth.

It is intended to build two small wharfs, about 3 miles apart, the upper at the point known as Steeves' Landing—for the accommodation of the river steamer and shipment of farm produce; the second wharf at Gautreau village, as a landing place for the fishing boats; wharfs, 150 and 170 feet long, are proposed, each with an approach, 15 feet wide and pierhead 30 by 30 feet.

At Steeves' Landing, during the fiscal year ending March 31, 1909, 340 cubic yards of ballast were procured and hauled to the site, by day labour, between October 20 and 28. A quantity of lumber and iron were also purchased.

At Gautreau village, during the same fiscal year, a right-of-way, 2,826 feet long and 2 rods wide, from the public road to the shore, was acquired, and graded, 20 feet wide between ditches, from the main road to the site of the wharf. Three small culverts were constructed, two of 9 feet and one 4½ feet span. About 400 cubic yards of ballast were quarried and hauled to the site; a quantity of lumber and iron was also procured for the construction of the wharf. Work was in progress between November 11 and 30.

The total expenditure amounted to \$2,631.22.

DURHAM.

Durham, the most easterly parish of Restigouche county, has a population of 2,200 occupied in lumbering, farming and fishing.

During the last fiscal year, the sum of \$30 was expended in clearing the break-water of logs, seaweed, &c., with which it was covered, on a length of 500 feet and to an average depth of 4 feet.

EDGETTS LANDING.

Edgetts Landing, in Albert county, is on the west side of the Petitecodiac river, 2 miles below the village of Hillsborough.

During 1908-9, fenders were placed upon the crib-work retaining wall, and the mud bed for vessels was completed. The approach to the wharf, for a distance of 300 feet, was wharfed upon the river side and raised about 2 feet with mud, brush and gravel. A ladder was placed on the side of the wharf.

Work was commenced on September 4, 1908, carried on during September, December and January, and completed on January 27, 1909.

The expenditure during 1908-9 was \$1,037.21.

EDMUNSTON.

The work of repairing the old wharf or breastwork, damaged by fire, was commenced on February 24, and completed on August 29, 1908.

9-10 EDWARD VII., A. 1910

The sum of \$10,440 was authorized to be expended, by contract, for the construction of an extension to the breastwork. Work commenced on December 5, 1908, and was completed on March 19, 1909.

The total expenditure for the fiscal year ending March 31, 1909, amounted to \$9,544.

EMERSON'S FALLS.

Work commenced on September 14, 1908, but was suspended on the 25th of the same month. The improvements consisted in the removal of 56 cubic yards of rock, by blasting, and the removal of boulders.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$145.45.

FORT DUFFERIN.

Fort Dufferin, built by the Imperial government to command the western entrance to St. John harbour, stands on high ground, immediately above the end of Negropoint breakwater.

In 1908-9, the break was repaired for a distance of 144 feet with 10 by 12 timber, from one to four tiers in height; seventeen frame knees were made and placed in position; 400 cubic yards of ballast, which had been washed out, were replaced and 100 additional cubic yards were taken from the beach and put in the work. A pile-driver was also built.

Commencing at a distance of 30 feet from Negropoint breakwater, 308 close piles were driven to protect the face of the breastwork, covering a distance of 256 feet. The cap timber was renewed for 104 lineal feet, and stone was placed round the tool-house to secure it for the winter.

Work was commenced on April 1, 1908, and carried on during the months of April, May, October, November and December, 1908, and March, 1909. Operations ceased on March 31, 1909.

The expenditure during 1908-9 was \$2,579.47.

GARDNERS CREEK.

Gardners creek, St. John county, enters the Bay of Fundy some 20 miles east of St. John harbour, and 14 miles from St. Martins railway station. Spring tides rise 30 feet; neaps, 25 feet.

The present work consists of substantial, open-faced cribwork, 215 feet long, sheathed on the north and east side. The head stands in a depth of 21 feet at high water, ordinary spring tides. The work, completed in 1896, affords one berth for coasters, but is dry at low water.

During 1908-9, two short pieces of cap timber, 12 inches square, one 8 feet and the other 9 feet in length, were placed in the work and secured. At the inner end of the wharf, where the road had been washed away, 11 pieces of sheathing were laid, secured and backed up with brush and stone. The approach was built up for a distance of 335 feet, the maximum fill being 3 feet. The lower side of this fill has been wharfed for a length of 160 feet, and a wire fence, 69 feet long, has been put up.

Work was commenced on October 16, and completed on November 6, 1908.

The expenditure during 1908-9 was \$289.75.

GAUNCES.

A breakwater was constructed, 82 feet long and from 3 to 31 feet wide, and 149 feet long and 21 feet wide, making a total length of 231 feet, 8½ feet high and about one-third filled with rock and bolted with iron bolts. Work was commenced on September 21, 1908, and completed the same year, on October 17.

SESSIONAL PAPER No. 19

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$499.95.

GRANDE ANSE.

Grande Anse, Gloucester county, a station on the Caraquet Railway, and a fishing and farming settlement, with a population of between 700 and 800 inhabitants, is situated on the southern shore of Baie des Chaleurs, 25 miles northeast of Bathurst and 15 miles west of Caraquet.

To afford shelter for the fishing boats, the department began, in 1876, the construction of a detached breakwater, which, at the beginning of the present fiscal year, consisted of a pier-head 238 feet long, and a shore arm 409 feet long. The last extension, 250 feet long, was completed in 1903-4.

During the fiscal year ending March 31, 1909, the construction of an extension to the shore was in progress, by day's labour, on August 25, September 3 and 5, and September 15 to December 5. A cribwork 250 feet long and 15 feet wide was built, 14 tiers high at the outer and 6 tiers high at the inner end. The stringers were laid on the outer 170 feet, and the work was sheathed on each side for 52 feet. Eight sills were laid along the inner 80 feet to support trestle bents which will carry the roadway at the incline of 1 in 12 from the level of the breakwater to the bank.

The expenditure for the fiscal year ending March 31, 1909, was \$3,239.81.

GRAND FALLS.

Between Grand Falls and Andover the channel of the river was cleared and 76 cubic yards of rock or boulders were blasted. Work commenced on August 8, 1908, and was completed on the 25th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$698.24.

GRAND LAKE.

Dredging.

This work was authorized on June 9, 1908, dredging commenced on the 13th of the same month and was completed on October 19, 1908. The total length of the channel made is 3,500 feet, being 75 feet wide on the bottom, with slopes of 3 to 1, the depth made being 7 feet at low water summer level. This dredging was performed by the Maritime Dredging and Construction Company.

During the fiscal year ending March 31, 1909, 96.673½ cubic yards of ordinary spoil were removed.

GRAND RIVER.

General improvements were made on the Grand river; the channel was cleared for a distance of 6 miles, 20 cubic yards of rock being blasted and the boulders removed. Work commenced on September 1 and was completed on the 19th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$189.50.

GRASSY ISLAND.

Dredging.

This work was authorized on October 15, 1908, and was commenced by dredge *Asp* on the 20th of the same month. This dredging was for the purpose of making a channel to Dunham's wharf, on the eastern side of Grassy island, to be 592 feet long and 75 feet wide and to have a depth of 9 feet, at low water level. the spoil consisting of sand and mud. Work was suspended on November 18, 1908.

9-10 EDWARD VII., A. 1910

During the fiscal year ending March 31, 1909, 9,784 cubic yards of ordinary spoil were removed and the total expenditure amounted to \$4,955.

GREAT SALMON RIVER.

Great Salmon river, St. John county, is a small tidal inlet, 8 miles east of Quaco. Shipments of lumber are made from this place to St. John.

A contract, for the construction of a breakwater, 180 feet long and 18 feet wide on top, for the protection of the entrance to the harbour, was signed on the July 27, 1905, and, by October, 1906, it was completed.

An extension, consisting of round cribwork, 192 feet long and 18 feet wide on top, which had been let by contract in November, 1907, was begun and completed during 1908-9.

Work was begun on June 7 and completed on October 27, in the same year.

The expenditure during 1905-9 was \$8,728.40.

HERON ISLAND.

Heron Island, Restigouche county, is about 4 miles long and is one mile wide. It lies in the Baie des Chaleurs, opposite New Mills Station, on the Intercolonial railway and is 1 to 2 miles distant from the mainland. By water, it is ten miles from Dalhousie.

The island is nearly surrounded by wide flats, which makes landing very difficult especially on the landing side. In 1890, the provincial government built a wharf, about 193 feet long, at a cost of \$900. The wharf, however, could not be reached, except at about half tide, and therefore was of very little benefit. The outer end also has been lifted and displaced by the ice and was liable to be carried away.

It was proposed therefore to rebuild the outer 25 feet of the present work and extend it 218 feet to reach a depth of 2 feet at L.W.O.S.T., or 11 feet at H.W.O.S.T.

Work began on October 8, 1908, was discontinued between December 6 and March 18, and by March 31, 1909, the outer 25 feet of the old wharf had been removed and replaced with a block, 24 by 18 feet, which wanted only the cap timber and the sheathing at the sides. An additional block, 22 by 18 feet, was built to the level of the top of the stringers, sunk in place and half filled with stone. The stringers of a span, 20 feet long, between the two blocks were laid. A ramp, 25 feet long by 18 feet wide, was built on the old work, as an approach to the higher level of the new. A quantity of materials were obtained for the continuation of the work.

The expenditure for the fiscal year ending March 31, 1909, was \$1,569.67.

INDIAN POINT.

A breakwater was constructed, 54 feet long, 3 to 12 feet wide and $3\frac{1}{2}$ feet high, filled with rocks. The work commenced on September 4, 1908, and was completed on October 12 of the same year.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$74.38.

IROQUOIS RIVER.

On this river, a breakwater was constructed, 200 feet long, $2\frac{1}{2}$ feet high and 5 feet wide; the channel of the river was also cleared for about three miles. The work commenced on October 12, 1908, and was completed on the 24th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$199.71.

KENNEDYS FLAT.

A breakwater was constructed, 460 feet long, 3 feet high and 6 feet wide. Work commenced on March 1, 1909, and was completed on the 20th of the same month.

SESSIONAL PAPER No. 19

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$237.

KOUCHIBOUGUAC.

Kouchibouguac Harbour, Kent county, is situated on the western side of Northumberland straits, 12 miles north of the entrance to Richibucto harbour and 18 miles south of Miramichi bay.

The entrance from the sea is through a narrow passage or gully, between long sand beaches that extend nearly parallel with the mainland and inclose a large expanse of water, generally very shallow, except in the channels from the rivers entering it, chief of which are the Black and Kouchibouguac rivers. The latter has a depth of 10 to 12 feet at low water, near Kouchibouguac village, about 8 miles from the entrance.

At the gully, there is 18 feet of water, but, outside, as usual on this coast, there is a bar extending completely across, having a depth of only about $7\frac{1}{2}$ feet at low water, and which varies considerably both as to depth and as to the position of the best water across it.

In the last few years, a new gully has opened up about one mile north of the main entrance and threatened by diminishing the current, to lessen the depth of water at the latter. The depth in the new gully was about $1\frac{1}{2}$ feet at L.W.O.S.T., or $6\frac{1}{2}$ feet at H.W.O.T. at the beginning of 1908.

Work has therefore been in progress during the fiscal year 1908-9 between August 24 and November 11, on the construction of a dam, 400 feet long, to close the new gully. The dam consists of piles, 6 feet apart, securing a brush mattress, 18 feet wide, to be weighted with large and small stone. Before the work had been securely ballasted, the heavy storm and exceptionally high tides of the 27th and 28th October carried away the greater part of the brush and about 20 of the 110 piles driven.

The expenditure for the fiscal year ending March 31, 1909, was \$2,489.09.

LAMEQUE.

Lameque, Gloucester county, is a fishing and farming settlement of about 375 inhabitants on Shippigan island, on the eastern side of Shippigan harbour.

During the last fiscal year, the construction of a warehouse, 30 by 80 feet, was commenced, it is to be built partly on the outer edge of the pierhead and partly on three cribwork blocks, two of which are 25 by 30 feet, and the third, 29 by 30 feet.

The construction of the blocks was in progress between September 1, 1908 and January 6, 1909, in which time two blocks were built to within three tiers of the top and the third block to within 7 tiers of the top. All three blocks were sunk in place and filled with ballast. A quantity of materials was procured for the completion of the work.

The expenditure for the fiscal year ending March 31, 1909, was \$2,499.63.

LITTLE RIVER (GRAND FALLS).

A dam was constructed at Grand Falls, Little river; it is 150 feet long, 12 feet high, 26 feet wide on the bottom and 11 feet wide on top, gravelled to within 4 feet of the top and with an abutment of 16 by 18 feet filled with stone; work was commenced on October 5, 1908, and was completed on the 24th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$456.58.

LITTLE FORKS (GREEN RIVER).

General improvements were made, by removing obstructions from the channel of the river and also cutting down bushes for a distance of 10 miles. This work was commenced on September 23, 1908, and was completed on October 7 of the same year.

9-10 EDWARD VII., A. 1910

LITTLE RIVER (ST. FRANCIS).

A dam, 130 feet long and 7 feet high, was constructed at this place; 30 cubic yards of rock were blasted and four big boulders removed. Work was commenced on December 21, 1908, and completed on January 5, 1909.

All obstructions were removed from this river and bushes were cut down for a distance of $2\frac{1}{4}$ miles. Work was commenced on October 1, 1908, and was completed on the 10th of the same month.

LONG ISLAND.

This island is in the Kenebecasis river, Kings county, it was formerly connected with Mathers island, but a channel between has been dredged and a small wharf constructed, consisting of round logs, filled with ballast, being 41 feet wide, 33 feet long, 10 feet on the front and 6 feet on the back. This work was commenced on September 26, 1908, and was completed on November 10 of the same year.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$1,577.07.

LOWER CARAQUET.

The district of lower Caraquet, Gloucester county, includes Pokesuedie island and the lower five miles of Caraquet harbour. It has a population of 1,200 engaged chiefly in fishing. Lower Caraquet village is 7 miles east of Caraquet station and 11 miles, by water, from Shippigan.

There are six lobster factories in the district and about 100 boats are used in the cod, lobster, and herring fisheries, the combined value of which is about \$100,000.

To provide for the landing and shipment of the fish, &c., and for the steamer service of the eastern end of Gloucester county, a contract was entered into, on March 17, 1909, for the construction of a wharf at Lower Caraquet village. The contract price is \$36,500.

The wharf is to be 2,600 feet long and composed of a shore block, 550 by 20 feet, 43 blocks, spaced 20 feet apart, 25 by 20 feet, one block is to be 25 by 30 feet, one span, 20 by 30 feet, and a pierhead, 50 by 30 feet.

Construction had not begun at the close of the fiscal year.

LOWER NEWCASTLE.

Lower Newcastle, Northumberland county, is a farming and lumbering district on the north shore of the Miramichi river, opposite Loggieville and 11 miles from Newcastle.

To provide a landing place for the river steamers, the construction of a wharf was begun in August, 1907, and by the close of the fiscal year, had advanced as follows: a stone approach, $16\frac{1}{2}$ feet wide and 70 feet long on the centre line, with cap timbers at the sides secured to cross ties, was nearly completed; a shore block, 40 by 20 feet, span of $15\frac{1}{2}$ feet, block, $20\frac{1}{2}$ by 20 feet, and span of 16 feet, required only a part of the cap timbers; the pierhead, 31 by 41 feet, required the covering, cap and part of the ballast and fenders.

Construction was continued on August 13 and 14, 1908, between August 21 and January 27 and between March 26 and 30, 1909.

The work, during the fiscal year 1908-9, consisted of building an additional block, 40 by 20 feet, connected with the original pierhead with a span of 15 feet, 40 feet wide. The part begun in the previous year was completed and the three outer blocks were partly sheathed with 4-inch creosoted plank.

The expenditure for the fiscal year ending March 31, 1909, was \$2,827.18.

SESSIONAL PAPER No. 19

MACES BAY.

Belas Basin, a cove of Maces bay, 25 miles, as the crow flies, west of St. John, but further by road, is defended from the sea by a beach, 1,700 feet long, and is dry at low water.

During 1908-9, a block of round cribwork, 32 feet long, 16 feet wide on top, was begun and built up to 3 feet below the level of high water, ordinary spring tides, and ballasted to a height of 2 feet below the finished top. The block is intended to form part of a projected wharf.

Work was begun on October 1 and carried on during October, November, December, 1908, and March, 1909. Operations were suspended on March 12, 1909.

The total expenditure during 1908-9, was \$599.18.

MAGUAPIT LAKE.

Dredging.

The dredging commenced on October 19 and closed on the 29th of the same month. The length of the channel, when completed, is to be 980 feet long by 70 feet wide on the bottom, with slopes of 3 to 1. This dredging was to be taken to 7 feet at low water, summer level, the material consisting chiefly of sand and mud.

During the fiscal year ending March 31, 1909, 4,809 cubic yards of ordinary spoil were removed.

MAIN RIVER.

Main River, Kent county, is situated on the Richibucto river, about 9 miles above Rexton.

A wharf, 150 by 30 feet, was constructed here by the Department in 1900 and 1900-1.

The wharf was repaired during the fiscal year 1908-9, between October 17 and 29.

The approach was surfaced with gravel and a ditch about 50 feet long, was made to carry off the water from the public road clear of the approach.

Total expenditure during the year, \$150.13.

MATHERS ISLAND.

Mathers Island, Kings county, is on the Kenebecasis river, near Rothesay. A pier was constructed at this place, consisting of round logs, filled with ballast; it is 23 feet long, 41 feet wide, 10 feet deep on the face and 5 feet deep on the back. Work was commenced on August 13, 1908, and was completed on September 25 of the same year.

MAUGERVILLE.

Maugerville, Sunbury county, is about 3 miles from Oromocto. During the last fiscal year, a high water wharf has been constructed of round cribwork, 55 feet long by 51 feet wide, fully ballasted with stone, battered on the upper side at the rate of 1 to 1, and on the other sides at the rate of 1 to 10. Work was commenced on October 12, 1908, and was completed on March 19, 1909.

During the fiscal year ending March 31, 1909, the total expenditure amounted \$2,941.96.

MCGOWANS (SHEFFIELD).

McGowan's, Sunbury county, is 20 miles from Oromocto. The former high water wharf was rebuilt; it is of round cribwork, 79 feet 11 inches long, 24 feet 6 inches wide on top, battered on the upper side for a distance of 43 feet 10 inches, the latter 36 feet of the wharf being the approach.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$2,719.11.

9-10 EDWARD VII., A. 1910

MILLS POINT.

Mills Point, Northumberland county, is situated on the southern side of Miramichi bay, 7 miles eastward of Bay du Vin. It is protected from the main Miramichi bay by Vin, Egg, Fow and Huckleberry islands, inside which is Lower Bay du Vin, forming an inner passage, about 10 miles long, to Escuminac. Mills Point lies at the eastern end of navigation in this passage, the 5 miles between the Point and Escuminac being only used by small fishing boats.

The Point is central for a good farming district and for the oyster fishery of Bay du Vin, the catch from which amounts to about 2,000 barrels per year, it is easily accessible for the large fresh and canned fish industries of the islands and Escuminac.

On February 6, 1908, the department entered into a contract for the construction of a wharf at Mills Point, 1,330 feet long, consisting of an approach, 20 by 135 feet; 25 spans each 20 by 20 feet; 24 blocks 20 by 25 feet, 1 block 30 by 25 feet, 1 span, 30 by 20 feet, and a pierhead, 30 by 50 feet.

Construction was begun on April 13 and was practically closed down for the season on October 16.

On March 31, 1909, there remained to complete the work: placing 3 ladders and 40 short lengths of fenders, trimming off about 15 projecting timbers and applying the wood preservative at a few points.

The expenditure of the fiscal year, 1908-9, was \$17,023.90.

MISPEC.

Mispec, about 8 miles east of St. John, is a narrow tidal inlet in the rocky coast of the Bay of Fundy, at the head of which a pulp mill has been built. Two piers protect the entrance of the harbour. Both are of square cribwork, the west pier, built in 1885, being 196 feet long, 20 feet wide on top and 29 feet high. The east pier, built in 1901 is 163 feet long, 34 feet wide and 30 feet high. Spring tides rise 25½ feet.

During 1908-9, an extension of the east pier, of square cribwork, to protect the vessels of the pulp mill, was begun and completed, by contract. The work is 60 feet in mean length and 34 feet wide on top. It has a sloping face on the weather side.

Work was commenced on June 22, 1908, and completed by November 10, in the same year.

The expenditure during 1908-9 was \$7,499.25.

MONCTON.

Moncton, Westmoreland county, N.B., is the second among the cities of the province. It is the headquarters of the Intercolonial and of the Moncton and Buctouche railways. It lies on the north side of the Petitecodiac river, 20 miles from the mouth, in Shepody bay.

The public wharf at Moncton has a frontage of only 90 feet. To accommodate the schooner traffic and for the shipment of deals, a contract, for an extension, 160 feet long, was entered into on July 8, 1908. The contract price is \$14,925.

Work began on October 15 and closed down about November 1, when from 1 to 8 tiers of face timbers has been laid in a length of 63 feet.

A change is desired in the level of the bed as given in the contract plan and other improvements have been suggested. New contract plans have therefore been called for.

The expenditure for the fiscal year 1908-9, amounted to \$393.47.

SESSIONAL PAPER No. 19

NEGROPOINT.

Negropoint, St. John county, is a headland, about 60 feet above high water mark at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy. Spring tides rise 25.33 feet; neaps, 15 to 20 feet.

In addition to convenience of position for distribution, by rail, of cargoes landed at the city of St. John, the harbour is remarkable principally for great tidal range, and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from southeast to southwest, but southerly waves are broken by Partridge island, and southwest waves are mitigated by Negro point breakwater, while the 'foul ground,' a shoal tailing down from the peninsula on which the city is built, must have more or less effect in moderating the force of the easterly seas rolling round Mispec point.

By Partridge island, a rocky eminence devoted to quarantine and lighthouse purposes, the entrance of St. John harbour is divided into east and west channels. In the former or main channel, a minimum navigable depth of 19 feet is found on the bar at low water at ordinary spring tides. Two hundred yards inside the crest of the bar, a depth of five fathoms is obtained in the narrow fairway, while higher up and between the most southerly of the principal wharfs on either side of the harbour (450 yards wide at that point) twelve fathoms are given in mid-channel. The west channel, 10 to 14 feet deep at low water, and originally 1,200 yards wide, has been contracted to about as many feet in breadth by Negropoint breakwater, which extends 2,200 feet S.E. by S., from the headland so styled.

In 1895, the department began the work of reinforcing and reconstructing the breakwater with large granite blocks and cement concrete. This work has been carried on every year since, except in 1896-7, and details of operations may be found in annual report of 1906-7 and 1907-8.

In 1908-9, 2,006 cubic yards of granite, 1,250 barrels of cement and 1,257 barrels of sand were delivered. Thirteen blocks of concrete, aggregating 319.4 cubic yards, were made in place. About 1,800 cubic yards of granite were crushed to the proper size for making concrete for next season and piled in a safe place for the winter. About 200 cubic yards of granite were placed in the breakwater, small stone was placed about the base of concrete blocks, and some of the covering of the cribwork, which had been carried away by a storm, was replaced. Carbolinum avenarius was taken to Negro point, piled up and protected from the weather.

Work for the year was begun on August 29, 1908, and was suspended on March 31, 1909.

The expenditure during 1908-9 was \$19,957.24.

NEGUAC.

Negunae, Northumberland county, lies on the northern side of the inner Miramichi bay, 27 miles northeast of Chatham.

Between 1892 and 1894, the department constructed here a wharf, 1,180 feet long, with a depth at the outer end of $5\frac{1}{2}$ to 6 feet at low water.

Some damaged and decayed planks in the covering were replaced, at a cost of \$48.49.

Work was commenced on the 27th and completed on October 29.

NICTEAU LAKE.

General improvements were made at NictEAU lake and Caribou brook was cleared for a distance of about 3 miles, by removing all obstructions and clearing the channel. Work was commenced on October 12, 1908, and was completed on the 22nd of the same month.

9-10 EDWARD VII., A. 1910

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$141.

NORTH HEAD.

At Flag Cove, near North Head, in Grand Manan, an island forming part of the county of Charlotte, and lying 24 miles south of St. Andrews, but double that distance from St. John, a wharf, known as Dixons, was purchased by the department.

In 1906-7, a little ballasting was done.

On June 11, 1907, a contract was let for an extension of this wharf, 200 feet long and 25 feet wide on top, with a battered face on the weather side. Work of construction was begun in the same month.

By the end of 1907-8, two cribs had been sunk in place, and had been extended shoreward to Dixons wharf, the whole substructure of the new work being built up to an average height of $3\frac{1}{2}$ feet below the foot of the sloping face.

In 1908-9, the contract work was completed, with the exception of two tiers of 10 by 12 timber, to form a break.

A new approach of trestle work, 95 feet long and 33 feet wide, was built in 1907, together with a cribwork protection, ballasted with stone, 68 feet long and 14 feet wide. Between this approach and the contract work, the old wharf was swept away by the storm of February 1 and 2, 1908. The old cribwork, while in course of demolition, carried away two bents of the new approach and shifted the position of three others.

During 1908-9, these three bents were returned to position. The cribwork protection was extended, by day's labour, for a length of 56 feet, by a width of 16 feet, and an average height of 11 feet. Another block of square cribwork, 101 feet long and 30 feet wide, was begun and brought up to an average height of 13 feet, or to within 5 feet of the finished height.

The contract work, which was begun on June 22, 1907, was completed on January 2, 1909, with the exception of the break.

The day labour work was begun on October 10, 1908, and work was suspended on March 30, 1909. Work was in progress during this period.

The total expenditure during the fiscal year amounted to \$21,979.59.

OAK POINT.

Oak Point, Northumberland county, is a farming and fishing district on the north side of the Miramichi river, 11 miles below Chatham.

To provide shipping facilities and a landing place for the river steamer, a contract was entered into, on October 23, 1906, for the construction of a wharf at Oak Point. The contract price was \$7,200.

The work began on June 8, 1907, and was completed on February 13, 1908.

The wharf is 481.3 feet long, consisting of 10 blocks, 20 feet square, 11 spans of about 20 feet and pierhead, 30 by 51 feet. The depth at the pierhead is 8 feet at L.W.O.S.T.

During the fiscal year 1908-9, inclined approaches were built at the shore end to give access to the beach and enable teams using the bord ice, which is the customary road in winter, to pass over the wharf. About 70 cubic yards of earth and rock were received from the cliff on the westerly side, to widen the approach, and 12 granite boulders on the shore were blasted and removed.

The work was done between September 21 and October 7, except removing the boulders, which took about seven days in the early part of November.

The expenditure for the fiscal year 1908-9 was \$339.03.

OROMOCTO.

Oromocto is a post settlement in Sunbury county, on the St. John river, 6 miles from Waasis, a station on the Fredericton branch of the C.P.R., 10 miles from Fredericton.

SESSIONAL PAPER No. 19

A high water wharf is being constructed of round cribwork, 105 feet 1 inch long on top, fully ballasted with stone, consisting of a pier-head, 51 feet 6 inches by 39 feet 7 inches on top, battered, on the upper side, at the rate of 1 to 1 and, on the other sides, at the rate of 1 in 10, together with an approach of continuous cribwork, 65 feet 6 inches long and 21 feet 9 inches wide on top, battered, on the upper side, at the rate of 1 to 10, and, on the lower, at the rate of 1 in 10, together with a further approach of rock and ballast, at present 13 feet 6 inches in length, but not completed.

Work was commenced on October 12, 1908, and was suspended on March 6, 1909.

The wharf is complete, with the exception of the fenders to be placed on the lower side, together with one-half the sheathing on the upper face and the roadway.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$4,530.14.

PARTRIDGE ISLAND.

In order to furnish Partridge island, the lighthouse and quarantine station at the entrance of the harbour, with a water supply, an agreement was made with the corporation of St. John, whereby it extended the pipe line, in 1904, from St. John street to H. W. mark, below Fort Dufferin. The work was completed in November of that year. The department paid \$4,067.74, being three-quarters of the cost, the corporation doing the work of construction and continuing to maintain that part of the pipe line.

On Partridge island, the department, in that year, excavated 2,032 lineal feet of standard trench, almost entirely in rock. 3,600 lineal feet of 6-inch, extra heavy, galvanized, wrought-iron pipe were purchased, together with 202 flexible ball joints. 2,300 lineal feet of cast-iron pipe were also delivered, together with six valves and the same number of tees and hydrants.

In 1905-6, nine hundred and forty-six lineal feet of cast-iron pipe were laid, together with 3,253 lineal feet of wrought-iron pipe, with flexible joints, which were laid under water across the west channel of the harbour of St. John. Water was turned on in February.

In 1906-7, 1,719 lineal feet of trench were excavated principally in the rock, to the full depth; 2,332 lineal feet of 6-inch pipe were laid, together with 936 lineal feet of service pipe. 3,332 lineal feet of trench were back-filled; 11 hydrants, 9 gates and one blow-off valve were placed. At the disinfecting house, the pipe was boxed with concrete, 2½ feet square, for 30 feet in length. Two concrete retaining walls, both 3½ feet thick, one 18 feet long and 12 feet high, the other, 12 feet long and 8 feet high, were built, and all the gates and the blow-off valve were boxed. The pipes were carried and connections were made with all the buildings, the medical officer's house and the fog-whistle.

During the severe frost, on February 24, the submerged pipe, which lies on the bottom of the west channel, was found to be frozen. The temperature of the sea water, taken at that time, was 31 degrees F.

In 1907-8, the damage by frost, which occasioned leaks, was repaired by August 15, when the water was turned on. At that date, the schooner *Two Sisters* let go her anchor, fouled the pipe and parted it. The leak was practically stopped in October. On the night of November 7, during a heavy storm, another leak was made, probably by a schooner dragging her anchor. This leak was stopped on November 24. In repairing these leaks, the services of a diver had to be obtained.

On the island itself, the work of laying the pipe was completed. Seventy feet of trench were excavated, 120 feet of pipe were laid, and a length of 665 feet of trench was refilled. The trench, throughout the island, was rounded and graded up to protect it from the frost; water was taken into three of the buildings, and the under-pinning was built.

A notice board was prepared, cautioning masters of vessels from anchoring on the pipe line. This board was carried away in the storm of the first of February.

9-10 EDWARD VII., A. 1910

Another notice, to the same effect, was painted, in large letters, on the masonry of the lighthouse, at the end of the breakwater.

Twenty fenders were placed on the low water landing of the quarantine station, which were capped and braced. A block of cribwork, 43 feet long, 10 feet wide and 6 feet high, was built and ballasted to protect the gate at the shore.

During the year 1908-9, several leaks have been discovered in the pipe and have been repaired by a diver. According to the meter, if it reads correctly, there is still an undisclosed leak. Part of this pipe lies on the bottom, and as far as can be ascertained, there is no leak in this part. The remainder of the pipe is laid in a dredged trench, and it will be a difficult matter to establish the leak in the trench, where it is supposed to be. Water has been turned on in the pipe at intervals, in order to supply the island.

Work was resumed this year on April 29, 1908, and suspended on February 10, 1909.

The expenditure during 1908-9 was \$144.07.

PARTRIDGE ISLAND.

Dredging.

During the last fiscal year dredging was done to 9 feet below low water around the quarantine wharf, so as to permit the quarantine boats to land at low water. Work began on December 29, 1908, and was suspended on January 8, 1909.

Some 1,472 cubic yards of ordinary spoil were removed and the total expenditure amounted to \$1,372.80.

PETIT ROCHER.

Petit Rocher, Gloucester county, is a farming and lumbering village and settlement on the northwestern side of Baie des Chaleurs, 12 miles north of Bathurst.

On March 31, 1908, there remained to complete the breakwater commenced in 1905, the building of a break, 12 feet wide by 5 feet high, around the outside and the placing of stringers and covering on the inside section 18 feet wide.

To enable the work to be used as a wharf, and to further protect the area inside the breakwater, a second contract was entered into on September 4, 1907, for an extension to the shore, consisting of a 45-foot addition to the cribwork and a rubble mound, 450 feet long and 24 feet wide on top, with slopes of large stone close laid; a superstructure of cross ties, stringers and plank and a concrete curb along the outer face, 3 feet wide at the bottom, 2 feet at the top and 3 feet high.

Construction was begun on December 11, 1907, and by March 31, 1908, the stone embankment had been built to sub-grade, i.e., to 2 feet below the finished top, for a length of 371 feet, and stone for the core had been deposited for a further length of 47 feet, about 20 feet wide. The cribwork block had been built 14 tiers high and partly filled with stone. The extension was completed on July 21, and the main breakwater on November 21.

Between September 25 and October 6, 200 cubic yards of large boulders and mixed stone were deposited, by day's labour, outside the outer end of the stone embankment, to break the force of the seas, which are concentrated there by the form of the bottom and outlying the reefs.

The main breakwater was also strengthened by placing, around the outside face, 218 extra fenders.

This work was commenced on the 11th and completed on the 24th of September, 1908.

Between March 18 and 25, 1909, 150 cubic yards of large stone were placed outside the outer end of the stone embankment to further protect the toe of the slope, and a derrick was built for placing stone, &c.

The expenditure for the fiscal year 1908-9 was \$17,223.86.

SESSIONAL PAPER No. 19

PINK ROCK.

Pink Rock, Westmoreland county, lies on Shepody bay, about 12 miles south of Dorchester.

Large deposits of gypsum crop out on the shore here, which are being developed by the Albert Manufacturing Company and the N. B. Gypsum Company, who, for the purpose of shipping the plaster, have built a wharf 226 feet long and 26 to 28 feet wide on top.

To give facilities for shipment by tramp steamers and for the general accommodation of vessels trading at the head of the Bay of Fundy, an extension of this wharf was asked.

On September 17, 1907, an agreement was entered into between the companies and the department, binding the companies to build a public road to the wharf and to allow the use of the wharf by the general public, the government to have the right to collect wharfage on the whole wharf other than from the companies' vessels, on consideration that the department extend the wharf. At the same time the companies excavated a berth along the inside of the wharf almost to the shore to render the necessary extension as short as possible.

An extension was accordingly begun during the fiscal year 1907-8 and reached a height of 19 feet. Construction was resumed on May 1, 1908, and completed on June 9. The extension is 75 feet long, 28 feet wide on top, and has an average height of 27 feet. It is built of round timber, with 10 inches by 10 inches cap and fenders, covered with 4-inch plank and filled with ballast.

The expenditure for the fiscal year 1908-9 was \$2,177.74.

POINT DU CHENE.

Point du Chene, Westmoreland county, lies on the western side of Northumberland straits and on the southeast side of Shediac harbour. It is a terminus of a branch line of the Interecolonial Railway and for the steamer *Empress*, running during the season of navigation from Summerside, P.E.I.

The works at Point du Chene consist of two breakwaters, an inner and an outer, each 600 feet long, with an opening between of 80 feet, and a ballast wharf 200 feet long, connecting the outer breakwater with the Interecolonial Railway wharf. They have been repaired or rebuilt at various times.

During the fiscal year ending March 31, 1909, the covering and stringers along the inner end of the outer breakwater, which had been lifted and displaced by the storm, were replaced, and 1,332 cubic yards of slope and core stone were deposited along the outside face.

Some 37,890 feet B.M. of 6-inch creosoted timber was procured, for sheet-piling and outside face of the ballast wharf.

Work was commenced on August 4, and completed on October 22.

The expenditure for 1908-9 was \$7,974.99.

POINT WOLFE.

Point Wolfe, in the county of Albert, is a small natural harbour on the north shore of the Bay of Fundy, about 57 miles east of St. John. The river mouth gives an indraught from the bay, 1,800 feet long and 700 feet wide. The harbour lies at the upper end of the embouchure, and is formed by a beach or bar thrown up by the sea, 1,000 feet long, 200 feet wide and 14 or 15 feet higher than the flats. The crest of this bar was being washed away by the waves to the detriment of the basin inside.

During the year 1908-9, one waling was added to the breastwork for 700 feet in length, and ballast was placed in the work to the top of this waling. A groyne of piles and plank was built some 200 feet from the former groyne, with the view of collecting further littoral drift and preventing damage. Brush, stone and gravel

9-10 EDWARD VII., A. 1910

were placed on the bank of the creek to prevent further removal of sand from the inner side of the work. The end of the work was also sheathed with round poles.

Work was begun on October 5, 1908, and was suspended on March 30, 1909. Work was in progress during October, 1908, and March, 1909.

The expenditure during 1908-9 was \$498.12.

PROVINCIAL GOVERNMENT WHARFS.

For the use of the steamers, the provincial government has built a number of wharfs, towards the cost of which the federal government has made contributions equal to half the value of their construction. The following contributions were made during the fiscal year ending March 31, 1909:—

Upper Gagetown, Queens county.. . . .	\$ 486 00
Chipman, Queens county.. . . .	467 50
Mouth of the Jemseg, Queens county.. . . .	317 13
Waterboro, Queens county.. . . .	682 50
Queenstown, Queens county.. . . .	803 75
Burton, Sunbury county.. . . .	929 75
	\$3,686 63

QUACO.

Quaco, St. John county, is on the northern coast of the Bay of Fundy, about 30 miles to the northeastward of the entrance to St. John harbour. The bay is semi-circle and lies open to the southeast between Quaco Head and Macomber Point, some 2 miles apart, the breadth from a straight line drawn between these capes being about a mile. At the mouth of a small river, discharging into the eastern end of the bay, a harbour of refuge has been formed by the construction of two piers, the eastern work, 310 feet long, built in 1873, and the western, 302 feet long, built in 1882-3. The harbour is dry at low water and is only accessible for about six hours during each tide, to the coasting vessels which come to load timber or to seek shelter. Spring tides rise 30 feet; neaps, 23.

During 1908-9, an expenditure was incurred in purchasing timber for rebuilding the pier-head and 19 feet in length of the east pier. These repairs, however, were not commenced.

On December 28, 1908, a contract was awarded for the construction of an extension to the east pier. Work was started on March 11, 1909, and some excavating for the foundation of the cribwork was done before the end of the fiscal year.

The contractors for this work have also agreed to make the repairs to the east pier, and the timber purchased for these repairs is to be taken over by them.

The total expenditure during the last fiscal year amounted to \$2,137.50.

QUACO WEST.

At West Quaco, 30 miles to the eastward of St. John, a small wharf of round cribwork, 43 feet long on the face, 20 feet wide and about 2½ feet in mean height, was built by the fishermen, to be used as a landing.

In 1908-9, the department paid the cost of this wharf, the expenditure being \$77.98.

REXTON.

Rexton (formerly Kingston), in the county of Kent, is situated on the Richibucto river, about 3 miles above Richibucto.

During 1891-2, the department constructed a public wharf 199 feet long and about 36 feet wide, immediately above the highway bridge.

SESSIONAL PAPER No. 19

Through lack of ballast, the wharf had been lifted by the ice about two feet on the inner side, the timbers having parted at about half tide level.

Repairs were, therefore, made during the fiscal year 1908-9, between October 1 and 30, at a cost of \$549.49. A ballast floor was inserted along the inner side and covered with 263 cubic yards of ballast. The covering of the wharf and the hand-rail along the approach, were repaired and the fenders rebolted.

RICHIBUCTO BEACH.

Richibucto harbour, Kent county, lies on the eastern side of Northumberland straits, about 26 miles south of the entrance to Miramichi bay and 40 miles north of Shediac. It is one of the New Brunswick deal ports and the terminus of the Kent Northern railway.

To improve the entrance to the harbour, it was proposed, many years ago, to construct two breakwaters, one from the north and the other from the south beach, the object being to confine the outlet and produce scour. With this end in view, and also to protect the beach itself from erosion, works running east and west were commenced on the north beach, in 1873, and carried on at various times until 1901, when they had reached a total length of 2,158 feet, of which the outer 300 feet has been abandoned. The remainder acts at present merely as a protection to the beach.

From 1901 to 1904, a section of the north breakwater, 300 feet long, was built, starting at the outer end of the beach protection works.

On November 16, 1905, a contract for a 300 foot extension of the breakwater was entered into. The breakwater consists of brush mattresses, weighted with small stone, through which three rows of piles, 5 feet apart are driven and on which a rubble mound is laid, 12 feet wide on top, finished with large stone sloping at the rate of 2 to 1 on the sides.

Work began on May 1, 1906, and, at the close of the fiscal year 1907-8, the four lower and three of the upper mattresses had been laid and also extra mattresses to make up for the increased depth of water at the site through scour of the bottom by the current. The pile driving had been completed, the stone slope was laid to 242 and the core stone to 274 feet from the inner end.

The contract was completed on August 25, 1908. The length of the extension on the top is 326 feet.

Between September 7 and November 12, 1908, work by day labour was in progress on a further extension. The lower mattresses, two tiers deep, reaching to about half tide level, were placed for a length of about 140 feet and loaded with stone.

The expenditure for the fiscal year 1908-9 was \$12,900.07.

RICHIBUCTO CAPE.

Richibucto Cape, Kent county, lies 6 miles southeast of the entrance to Richibucto Harbour and $5\frac{1}{2}$ miles north of Chockfish River. The distance from Richibucto Cape to Prince Edward Island is $14\frac{1}{2}$ miles.

The inhabitants of Richibucto Cape, Richibucto Village (2 miles inland), and the neighbourhood, number about 1,000, engaged in farming and fishing.

During the fiscal year 1908-9, between September 7 and February 13, work was in progress on the construction of a roadway to the proposed breakwater, about 200 feet long and 20 feet wide, with a maximum cutting of 10 feet in the shale and sandstone cliffs. Quarries were opened at different points and about 1,040 cubic yards of large stone were quarried and 970 cubic yards hauled to the site. The approach to the breakwater, consisting of a stone embankment, 15 feet wide on top with slopes, on the outside, of 2 to 1 and, on the inside, of 1 to 1, was begun and about 30 feet of the outer slope and 70 feet of the inner slope were laid. A quantity of timber and other materials were obtained for the extension of the work.

The expenditure for the fiscal year 1908-9 was \$5,186.32.

9-10 EDWARD VII., A. 1910

RICHIBUCTO.

Richibucto, the shire town of Kent county, has a population of about 1,100 and is situated on the Richibucto river, about 3 miles from its mouth.

During the fiscal year 1908-9, the municipal wharf was acquired by the department and the construction of a block, 184 feet long, 30 feet wide and 7 to 8 feet high, was in progress between September 21 and November 21, to replace part of the old approach.

The upper tier of cross ties and the cap are still required on the southerly side, which is now occupied by the railway siding, and the whole top must be surfaced with gravel to complete the block.

ROTHESAY.

Rothesay, Kings county, is on the Kennebecasis river.

The local wharf was turned over to the federal government and a right-of-way acquired. During the last fiscal year, general repairs were made to the structure and a ramp added, extending along the approach from the level of the flooring, at the pier-head, to above high water, at the shore end. This wharf consists of a pier-head, 100 feet in length, 39 feet 3 inches in width, with a ramp, 118 feet long and 24 feet 3 inches wide, together with a rockfilled roadway, 50 feet long. A plank side walk, 5 feet in width has been placed on the upper side of the work, the balance being surfaced with gravel, except for the outer face of the pier-head, where spruce flooring was laid for a width of 20 feet.

Work was commenced on November 9, 1908; but on January 6, 1909, considerable damage was done by a run of ice; owing to the spring freshet, work was suspended on March 31.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$17,52.

RIVER ST. JOHN (TIDAL).

On a river such as the St. John, where large lumbering operations are conducted and logs are floated to the head of the tidal navigation, it may be supposed that some of them escape from the booms. This is especially the case when there is a rotten knot or end, which soon becomes saturated with water. Such logs continue to float down the river, with one end much deeper than the other, and they, together with trees drawn from the bank, constitute the snags which are frequently struck by the steamers and inflict serious damage.

During the fiscal year ending March 31, 1909, about 160 snags were picked up by a small tug and hauled up on an island, above high water mark, to prevent their taking to the water again on the rise of the river.

Work began on October 2, 1908, and was completed on the 31st of the same month. The total expenditure amounted to \$713.10.

ST. ANDREWS.

St. Andrews, in the county of Charlotte, is a terminus of a branch of the Canadian Pacific Railway, and lies, by water, 50 miles west of St. John. The town is situated at the mouth of the St. Croix, on the point of a peninsula stretching into Passamaquoddy bay, a deep sheltered inlet of the Bay of Fundy. In the summer months, St. Andrews is a favourite watering place, frequented by tourists, yachtsmen, and also by fishermen.

ST. GEORGE.

During 1908-9, an addition to the wharf on the east side, 140 feet long and 20 feet wide, with an average height of 19 feet, was built of round cribwork. This work, with the exception of the fendering, was completed.

SESSIONAL PAPER No. 19

Work was begun on September 15, 1908, and suspended on March 31, 1909. The expenditure during 1908-9 was \$3,918.95.

ST. JOHN HARBOUR.

Construction.

On November 24, 1908, a contract, in the sum of \$287,633, was entered into for the construction of an extension to the wharf at Sand Point.

The work will consist in the construction of lines of cribwork, 50 feet wide at bottom, starting at the incomplete northeast part of the present wharf, and in line with same, a length of 200 feet, thence 632 feet eastward, thence, at an angle of 45 degrees southwesterly, 297 feet 8 inches, thence westerly 163 feet to the end of the southern side of the incomplete present wharf.

In the area inclosed by the cribs is to be built a platform supported by piles and trestle work: the middle part, for a width of 50 feet, being intended to carry four railway tracks, will be built 4 feet 3 inches lower than the sides to within 15 feet of the outer end.

Operations were commenced on December 7, 1908, and were still in progress at the end of the fiscal year.

Total expenditure, \$55,312.63.

Dredging.

During the last fiscal year dredging operations were carried on at the following points in St. John harbour: Ballast wharf, Beacon bar, Sand point slip, Sand Point (600 and 400 foot extension and berths Nos. 1, 2, 3, 4 and 6), and York Point.

At the Ballast wharf work was commenced on December 4, and suspended on the 5th of the same month, during which period 356 cubic yards of ordinary spoil were removed, and the total expenditure amounted to \$1,124.80.

Work was resumed by dredge *Asp* on February 17, 1909, and was still in progress at the end of the fiscal year; some 12,489 cubic yards of ordinary spoil were removed, and the total expenditure amounted to \$2,898.40.

On February 16, 1909, a contract was awarded for dredging to be done at Beacon bar. Operations were commenced on February 26, but, owing to repairs to the dredge *Iroquois*, work was suspended on March 12.

This dredging is the beginning of the extension of the winter port berths to be southward of Sand Point. Under the present arrangements some ten berths are to be built, having a depth of 32 feet below low water.

During the fiscal year ending March 31, 1909, 787 cubic yards of ordinary spoil were excavated, and the total expenditure amounted to \$468.50.

A contract was entered into on September 30, 1905, for dredging a portion of Sand Point slip to a depth of 30 feet below low water. Work was commenced on October 9, 1905, and completed on July 22, 1908.

During the last fiscal year, 10,162 cubic yards of materials were removed.

In 1907, an agreement was entered into with the Dominion Dredging Company, Limited, for dredging on the 600 and 400 foot extension. Work was commenced on July 1, 1907, and was completed on April 29, 1908. The dredging was to be taken to 32 feet below low water.

During the fiscal year ending March 31, 1909, 77 cubic yards of class 1, 7 cubic yards of class 2 and 14,980 cubic yards of class 3 were removed and the total expenditure amounted to \$47,879.28.

The dredging of the southern half of the 400 feet extension, which had been commenced on September 9, 1907, was completed on May 30, 1908, the depth made being 32 feet below low water. During the last fiscal year, there were removed 12 cubic yards of class 1, 2 cubic yards of class 2, and 33,129½ cubic yards of class 3.

9-10 EDWARD VII., A. 1910

The dredging at berths Nos. 1, 2, 3 and 4 was commenced, on September 19, 1907, by Mr. G. S. Mayes, under contract with the City of St. John, with the understanding that the city would be reimbursed later by the federal government. A depth of 32 feet was required over this area for a width of 80 feet from the cap of the wharf but owing to the poor foundations of the wharf it was found advisable to make 31 feet, at low water, at berths Nos. 1, 2 and 3, while at berth No. 4. the upper end was allowed to slope up from 31 feet, at low water to 20 feet.

The work known 'as the core of the 400 foot extension' was commenced on July 18 and completed on the 24th of the same month. The dredging was taken to 32 feet below low water ordinary spring tides. Some 3,076½ cubic yards of ordinary spoil were removed.

During the last fiscal year, berth No. 6, Sand Point, was cleaned up and all boulders, which were above grade, were removed. Work was commenced on November 20 and completed on February 11, 1909, during which time there were removed 647½ cubic yards of class 1, 7½ cubic yards of class 2 and 55½ yards of class 3.

On December 24, 1908, instructions were received to permit dredge *Asp* to remove any shoaling along the face of the wharf at berth No. 6. Work was commenced on December 26 and completed on February 5, 1909, during which period some 2,319 cubic yards of materials were removed.

During the last fiscal year, the dredging done at York Point slip consisted in removing 9,139 cubic yards of ordinary spoil; the total expenditure amounted to \$8,372.10.

From October 30 to November 27, November 30 and December 1 to 17, 1908, the departmental dredge *W. S. Fielding* was engaged at the winter berths, in removing rocks, boulders and in cleaning from the steamship berths, to a depth of 31 feet, L.W.S.T., 13,675 cubic yards being removed, at a cost of 28.17 cents per cubic yard.

ST. LOUIS.

St. Louis, Kent county, is situated on the south side of the Kouchibouguacis river, about 7 miles north of Richibucto.

In 1888, the department constructed a wharf 208 by 30 feet, at the eastern side of the highway bridge.

Repairs were made in 1900-1 and again in 1902-3.

During the fiscal year 1908-9, on the 13th and between October 20 and 24, the wharf was surfaced with about 150 cubic yards of earth and small stone, 10 ballast poles 10 to 15 feet long being first placed in a hole at the outer corner where the chief settlement had occurred. The cost of this work was \$44.53.

SHIPPIGAN GULLY.

Shippigan gully, a passage between Shippigan island and the mainland, much used by fishing and other vessels in passing from Baie des Chaleurs to the Gulf of St. Lawrence, is situated 56 miles east of Bathurst, the shire town of the county of Gloucester, and 3 miles from Shippigan, the terminus of the Caraquet railway.

During the season of 1904 and 1905, a new channel, 150 feet wide with a depth of 8 feet at low water, was dredged across the flats inside the gully to cut off a wide sweep in the old channel and give vessels a straight course from the inner harbour to sea. Delays occurred in following the bends of the channel, except in favourable winds, a depression in the flats, known as the Little channel having 2½ to 3 feet at low water, leads from near the inner end of the cut to the old channel, through which a considerable current formerly ran. To deflect this current into the new channel and thus tend to preserve and deepen the latter, a dam was built across the Little channel during the fiscal year 1908-9. The dam is about 410 feet long and 18 feet wide and is composed of piles 6 feet apart centre to centre, driven in two rows 10

SESSIONAL PAPER No. 19

feet apart, centre to centre. A mattress, 18 feet wide, of fascines and brush is built around the piles and compressed to a thickness of about 6 feet with ballast of which about 500 cubic yards was placed over the top. The piles are cut off at about half tide level, to prevent their being pulled out or broken by the ice.

The breastworks on the east beach, at the lobster hatchery, were repaired, being filled with brush, 12 feet wide, 6 feet high for a length of 40 feet, and 2 to 4 feet high for a length of 50 feet, and ballasted with stone. A breastwork of pockets, brush and fascines, 7 feet wide, 5 to 6 feet high and 50 feet long, was built on the outside shore next the eastern breakwater, and 60 feet of a continuation of the same breastwork was filled with one to two feet of brush and two fascines. Two piles were replaced on the outside of the west breakwater and four iron straps were placed around a corner of the new block, at the west breakwater.

The expenditure for the fiscal year 1908-9 was \$2,807.48.

SHIPPIGAN HARBOUR.

Shippigan, Gloucester county, is a village and settlement of about 1,000 inhabitants, situated on the mainland, just opposite Shippigan island. It is distant by rail 55 miles from Bathurst and 3 from Shippigan gully.

In June, 1908, slight repairs were made on the approach to the wharf, which had been gullied out by spring freshets, and a sliding door was provided for the freight shed, which was painted with carbolineum, at a total cost of \$15.19.

SISSON FLAT.

A breakwater was constructed, 187 feet long, 21 feet wide and 7 feet high; it is ballasted for a depth of about two feet. Work commenced on August 4, 1908, and was completed on the 27th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$350.

STONEHAVEN.

Stonehaven, formerly Clifton, Gloucester county, is situated on the south side of Baie des Chaleurs, 13 miles east of Bathurst. The breakwater, originally 425 feet long and built by private persons, was acquired by the department in 1878. During the same year it was extended 325 feet. The outer 220 feet is placed at an angle of 72° with the shore portion.

During the year 1901-2, a cribwork block 70 by 40 feet at the western end of the work was completed. This is intended to stop the stone placed along the northern face of its protection from being carried westward during easterly storms.

In 1905-6-7, a new pier was built to protect the harbour from westerly storms. It starts at the shore, 225 feet westerly of the present work, and runs out towards the end block of the old breakwater. An entrance 120 feet wide is left between the two works. The new pier consists of an approach 254 feet long and 15 feet wide on top, with a stone slope faced with close laid granite blocks along the outside, and a pier-head 50 by 30 feet.

During 1907-8, 737 cubic yards of large and mixed granite boulders and ballast were procured and placed along the outside faces of the breakwater.

During 1908-9, this work was continued. Some 490 cubic yards of granite boulders, containing over one-half cubic yard each, and 84 cubic yards of granite ballast were obtained and placed along the outside face of the pier-head, where a smooth slope was laid for a length of 180 feet. Severe storms at the end of October, damaged 40 feet of this slope, which was relaid in November.

Work was commenced on August 17, and completed on December 12.

The expenditure for the fiscal year 1908-9 amounted to \$4,010.73.

9-10 EDWARD VII., A. 1910

TRACADIE HARBOUR.

Tracadie, Gloucester county, is a lumbering, farming and fishing village and settlement and a station on the Caraquet and Gulf Shore Railway. It lies 17 miles south of Shippigan gully, and 23 miles north of the main entrance to Miramichi bay. The population of the district is about 4,500. The exports and imports amounted to about \$300,000 in 1904.

Tracadie harbour is entered by what is known as the North gully, a passage through a sand beach, about 4 miles long, which divides the harbour from the Gulf of St. Lawrence. Outside the gully, is a bar over which there is a depth of only 2.5 feet at low water ordinary spring tides, or $7\frac{1}{2}$ feet at extreme high tides. And inside the gully is a very crooked channel about $2\frac{1}{2}$ miles long, with a least depth of 7 feet at low water, leading to the public wharf. The poor entrance to the harbour has been a great drawback to Tracadie, which was formerly an important fishing centre, the channel at the gully having been considerably deeper in former years. It is proposed to make a cut through the beach, opposite Tracadie village, on the site of an old gully by which North Tracadie river formerly entered the sea, and to protect the channel with comparatively short breakwaters outside.

During the fiscal year 1908-9, between October 13 and November 14, work was in progress on the construction of stake and brush breastworks along the beach, to retain the sand and thus raise the beach, a considerable part of which is at present below the level of storm tides. Some 4,982 pickets were driven for a length of 9,962 feet in two rows, 4 feet apart each way. Spruce timber and fir brush were procured to be placed between the pickets.

The expenditure for the fiscal year 1908-9 was \$1,951.64.

TRACADIE WHARF.

In 1894, the department constructed a block and span wharf at Tracadie, 1,430 feet long and 25 feet wide.

In 1900-1, a cribwork block, 55 by 27 feet, lying immediately outside the departmental work was repaired and connected with it, and repairs on the main structure were made during 1900-1, 1901-2, and 1903-4.

During 1907-8, the flooring of the wharf was repaired at a number of the worst places.

During 1908-9, between September 28 and 30 and October 1 and 18, the sum of \$499.99 was expended in removing old planking and laying 23,000 feet B.M. of new 3-inch deals. One stringer, 24 feet long, and 150 lineal feet of cap timber were renewed.

TROUT RIVER (ST. JACQUES).

A breakwater, 90 feet long, 4 feet high and 8 feet wide, was constructed and the river was cleared by removing and blasting boulders. This work commenced on August 11, 1908, and was completed on the 29th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$197.95.

TYNEMOUTH CREEK.

Tynemouth Creek, St. John county, 21 miles east of the city of St. John, is one of the several small havens, dry at low water, found on both shores of the Bay of Fundy, which are only useful on account of the high range of tide. Tides rise here about 28 feet. Inside a beach of gravel and stones, is a tidal basin, accessible to small vessels at high water by an opening at the east end of the beach.

During 1908-9, the top of the east pier and approach to a depth of 5 feet, was torn down and rebuilt. 37 new fenders were placed on the work, together with new

SESSIONAL PAPER No. 19

covering throughout. The road approach, for a distance of 200 feet, was raised 3 feet, being wharfed on the creek side with 3 tiers of timber, and filled in with gravel. Some ballast was placed in the west pier, and part of the ledge, inside the east pier, was ballasted.

Work was commenced on June 2, and completed on October 31, 1908.

The expenditure during 1908-9 was \$1,300.

UPSALQUITCH RIVER.

The Upsalquitch river is the largest tributary of the Restigouche from the south, and drains about one-third of Restigouche county. It enters the Restigouche river about 6 miles above Metapedia Station, on the Intercolonial railway. It is an important lumbering river, some 15 million feet of logs being driven down it annually and 15 lumber camps are situated on the river and its branches.

Improvements were asked to facilitate log driving and the passage of two boats, which carry about 100 loads of supplies to the camps each season, and, during August and September, 1904, the tops were blasted off about 19 ledges, a large number of boulders were blasted and removed and a gravel bar was deepened; all in the lower 12 miles of the river, at a cost of \$470.54.

During 1908-9, between September 26 and October 19, further improvements were made especially at the southeast falls, about 27 miles above the mouth. A roadway of cribwork, 170 feet long, 15 feet wide and 5 feet high, was built to allow the passage of tow horses past the falls. A channel, 15 feet wide, was made along the edge of the falls through a shoal of rocks at the foot and three ledges in the course of the falls. Trees and rubbish were cleared from the banks for 200 feet above the falls, to allow the passage of teams along the bank at high water. A point of rock, on which the logs jam, was removed about one half mile below the falls, as also a large boulder, on the main river, about 10 miles above the mouth.

The expenditure for the fiscal year 1908-9 was \$480.57.

VASSEUR.

A breakwater, 25 feet long, 5 feet high, 7 feet wide and filled with rocks, was constructed. This work commenced on November 18, 1908, and was completed on the 25th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$72.85.

WAPSKEHEGAN RIVER.

At the mouth of this river a breakwater 265 feet long, 18 feet wide, 6 feet high, and about one-third filled with rocks, was constructed. This work was commenced on October 19, 1908, and was completed on November 17 of the same year.

Two other breakwaters have been constructed on this river, one 60 feet long, 6 feet high and 15 feet wide, the other 65 feet long, 6 feet high and 15 feet wide. This work was commenced on March 1, 1909, and was completed on the 16th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$484.45.

WATER'S.

A breakwater was constructed 215 feet long, 19 feet wide, 5½ feet high, and about one-sixth of the construction was filled with rock and is bolted with iron bolts. The work commenced on September 1, 1908, and was completed on the 19th of the same month.

During the fiscal year ending March 31, 1909, the total expenditure amounted to \$351.91.

9-10 EDWARD VII., A. 1910

WELCHPOOL.

Welchpool, a fishing village of 600 inhabitants, is situated on Campobello island, forming part of the county of Charlotte, 50 miles southwest of St. John, in a direct line and 14 miles south of St. Andrews. Spring tides rise $21\frac{1}{2}$ feet; neaps, $18\frac{1}{2}$ feet.

A contract for the construction of a wharf, consisting of a pier-head 40 by 60 feet, a cribwork approach, 239 feet long, 24 feet wide for 213 feet and 42 feet wide for 26 feet, and a stone approach 35 feet long and 24 feet wide on top, was let on January 22, 1909.

By the end of the fiscal year the cribwork approach was built for a length of 215 feet and an average height of 13 feet, and the stone approach had been commenced. Work was begun on January 19, 1909, and is still in progress.

The expenditure during 1908-9 was \$4,290.67.

WILSON'S BEACH.

Wilson's Beach is a fishing settlement in a slight indentation of the coast on the west side of Campobello, an island in the Bay of Fundy, forming a part of the county of Charlotte.

During the year 1908-9, five loose piles, to act as elastic fenders, were placed on the western corner of the breakwater.

Work was begun on March 23, and completed on March 31.

PROVINCE OF QUEBEC.

AGNES, LAKE MEGANTIC.

Agnès, a post village in Beauce county, is situated on the River Chaudière, southeast of the town of Lake Mégantic, on the Canadian Pacific Railway. Population, 500.

On October 23, 1907, a contract was entered into for the construction of a landing pier near the site and upstream of the old bridge connecting Agnès with the village of Mégantic. It called for:

1. An outer concrete pier 25 feet 8 inches long and 4 feet wide at top, 26 feet 8 inches long and 5 feet wide at bottom, standing 9 feet $3\frac{1}{2}$ inches high from low water level, on a close-faced crib substructure, 28 feet long and 10 feet wide, sunk in an average of $4\frac{1}{2}$ feet of water.

2. A 40-foot steel span composed of two 24-inch, 80-lb. I-beams connected by two 20-inch 65-lb. I-beams, with 6 by 8-inch tamarack and pine stringers, and 3-inch pine flooring 27 feet and $2\frac{1}{2}$ -inch wide; double, 1 $\frac{1}{2}$ -inch iron pipe railing, with iron posts every 8 feet on downstream side and 12 by 12 inch cap pieces on other side.

3. A concrete abutment terminating stone approach, 76 feet long and 27 feet $2\frac{1}{2}$ inches wide at top with sides riprapped and sloped one in one and a half, sidewalk and hand railing on both sides. Total length of wharf at top 122 feet, with flooring 10 feet 11 inches above extreme low water level. Contract price \$4,600.

Work was commenced in November, 1907, and at the end of March, 1908, the crib substructure of outer pier had been sunk in place, fully ballasted and the stone approach about one-third done.

The contract was completed March 31, 1909, with a further expenditure of \$4,520 for the last fiscal year. Right of way given to the Crown by the village council.

SESSIONAL PAPER No. 19

AMHERST.

Amherst village is situated at the eastern end of Amherst island, one of the Magdalen islands, in the Gulf of St. Lawrence.

Amherst is a port of considerable importance. Two steamers plying between Pictou, Souris and Magdalen islands, call twice every week at Amherst.

The landing pier commenced at Point Shea in May, 1900, was completed in 1903. The length of the pier, built of birch and maple close-faced cribwork, is 488 feet, with an approach of 550 feet leading to the pier. During the last fiscal year the foundation for a freight shed, 80 by 30 feet, was partly built.

Expenditure, \$1,122.58.

ANSE A BEAUFILS.

Anse a Beaufils, in the municipality of Cape Cove, county of Gaspé, is situated on the Gulf of St. Lawrence, 6 miles south of Percé.

In the years 1898 to 1901, protection works on each side of the channel, leading to the inner basin, were built, consisting of two training piers, each about 440 feet long.

In the last fiscal year, timber was bought for an amount of \$1,049.24 for a proposed extension to complete the work.

Expenditure, \$1,584.81.

ANSE A LA BARBE.

Anse à La Barbe, Bonaventure county, 6 miles below Port Daniel, is a settlement of 300 to 400 people, mostly engaged in the fishing industry.

In order to shelter fishing boats, which are numerous in the neighbourhood, a contract for the construction of a breakwater was awarded on January 29, 1908, for the sum of \$11,300.

Construction was begun on June 1, and completed on September 10, 1906.

The new breakwater, which stands in 18 feet of water, at extreme low water, is a construction of round timber, 300 feet long, 24 feet wide on the top, with a sloping of $\frac{1}{2}$ on all sides, well sheathed with 6-inch planks, and covered with 4-inch flooring.

The construction does not afford shelter for fishing boats only, but forms a safe harbour for large schooners engaged in the export of lumber, &c.

Total expenditure during the fiscal year ended March 31, 1909, \$6,974.20.

ANSE À LA CAVE.

Anse à la Cave, or Bon Désir, in the municipality of Les Bergeronnes, is situated on the north shore of the St. Lawrence, 5 miles east of Les Bergeronnes village.

The bay of Anse à la Cave is much frequented by schooners loading cordwood and timber.

During the year 1908-9, the work done was the blasting of big boulders obstructing the entrance to the bay.

Work started in October and was discontinued in November.

Expenditure, \$200.10.

ANSE A L'ISLOT.

Anse a l'Islet is a small harbour, 7 miles east of Newport, protected from the northerly and easterly winds by the main coast and from the southwest gales by a small island, being thus open only to southerly gales.

It was decided to build a landing pier running from the main shore towards the outside end of the island to a southwesterly direction answering both as a landing pier and as a breakwater against southerly gales.

9-10 EDWARD VII., A. 1910

During the fiscal year 1906-7 two cribs, 90 feet long each, were built. The first had but shortly been placed in position, when a very severe southerly storm turned it out of position and brought the second ashore where it was demolished. The first had to be altogether unballasted and brought ashore. During the months of February and March, a crib, 90 feet long, was built and placed in position in 6 feet of water, at low tide, and built to coping.

During the fiscal year 1907-8, the cribwork commenced, together with the approach, forming a total length of 260 feet, were completed.

During the last fiscal year a crib of 100 feet was built and all the materials to complete it bought.

Expenditure, \$4,662.62.

ANSE-AUX-GASCONS.

Anse-aux-Gascons, county of Bonaventure, is situated on the north shore of the Baie des Chaleurs, in the township of Port Daniel, 7 miles east of Port Daniel and 42 miles west of Percé. L'Anse-aux-Gascons is considered one of the best fishing stations of the Baie des Chaleurs.

During the session of 1897, in order to shelter a flotilla of 100 fishing boats, the sum of \$5,000 was voted towards the construction of a breakwater, 400 feet long, 20 feet wide.

On February 1, 1898, a contract was entered into for a bulk sum of \$11,494.

The construction, which is a close-faced cribwork, was commenced in 1898, and completed in 1899; with a total length of 436.5 feet.

During the fiscal year 1903-4, a contract was entered into for the construction of an addition, 210 feet long and 30 feet wide. The construction was begun in 1905, and completed in 1906. Contract price, \$15,494.

During the same fiscal year 1903-4, a sum of \$2,765.50 was expended for the construction of an approach.

During the fiscal year 1907-8, the new addition, which was broken and displaced by the sea during the big storm of November, 1906, had been repaired. The old portion of the wharf, which had settled down in many places, had been straightened out and levelled at a cost of \$3,999.82.

The addition forms an angle of 136 degrees with the main part of the wharf; during the great easterly gales, the sea strikes so hard against that angle that the water flies over the wharf and breaks or sinks the boats which may be lying on the other side for shelter.

At the last session of parliament, in order to prevent further disaster, a sum of \$2,600 was voted to build a crib so constructed as to fill up the angle.

Construction was begun on August 24, 1908; on October 24, date on which the work was suspended, a crib 159 feet long, by 28 feet at its greatest width, was placed in the angle, and built up to 2 feet above high water. The work was carried out by day labour, at the cost of \$2,598.70.

ANSE AU GRIFFON.

Anse au Griffon is 17 miles west of Gaspé Cape, Gaspé county.

In the last fiscal year, a wing, 125 feet by 22 by 10 feet, was built at the shore end of the west pier, to prevent the river from opening a new channel west of the training pier built in 1905-6.

Timber was bought for the proposed completion of the work.

Expenditure, \$1,434.46.

ANSE ST. JEAN.

Anse St. Jean is situated on the north shore of the Saguenay river, 25 miles above its mouth.

SESSIONAL PAPER No. 19

The public landing pier at this place was commenced by the local government in 1876, and continued by federal government in the years 1879-80-81.

During the last fiscal year, general repairs were made to the wharf; work was commenced on November 6 and completed on 24th of the same month.

Total expenditure, \$400.33.

ASHUAPMOUCHOUAN, PERIBONKA AND MISTASSINI RIVERS.

Ashuapmouchouan river, in the county of Chicoutimi, is one of the tributaries of Lake St. John and is navigable up to St. Félicien; a boat plys between Roberval and St. Félicien.

In view of the increasing depth of the channel, at extreme low water, three dykes were commenced in 1905-6, at St. Prime and at St. Félicien, in 1906-7 at Peribonka, and in 1908-9 at Mistassini.

At St. Félicien, the work done during the fiscal year was the completion of a stone and brush dyke. Work started August 1 and was completed April 1, 1909. The dyke has a total length of 2,000 feet and was built to raise the water level in the boat channel.

At Peribonka, the work done during the year 1908-9, was the completion of different dykes on the Peribonka river.

The work was started in September, and the dyke commenced last year was completed; it is 400 feet long by 2 feet high, on the north end, and 65 feet long by 2 feet, at the south end.

In October the department started to build a new dam, 250 feet long by 5 feet high. The work was stopped in the middle of December.

Mistassini river, in the county of Chicoutimi, is also a tributary of Lake St. John. The river is navigable up to Mistassini, distant from its mouth 18 miles, boats run from Roberval to Mistassini.

During the fiscal year 1908-9, the work done was the construction of a stone and brush dyke, for the purpose of raising the water level in the boat channel. The work was started in January and was discontinued April 1, 1909. Total length of this dike is 250 feet, height 10 feet.

Expenditure, \$3,008.70.

BAIE ST. PAUL.

Baie St. Paul is a village in the county of Charlevoix; its population is 1,500, and is situated on the north shore of the river St. Lawrence, 60 miles below Quebec. It is built on either sides of the Rivière du Gouffre, which is tributary of the St. Lawrence, and empties into a large bay 3 miles wide. The bay is dry at low tide.

During the last fiscal year, the embankment leading to the wharf at Cap-aux-Corbeaux, which was considerably damaged by a landslide from the cliff opposite to the wharf, was thoroughly repaired; 50 per cent of the cross-ties were replaced, the wooden flooring was taken off and replaced by macadam thus making this flooring permanent; the coping and the guards were completely renewed.

The overhanging boulders on the cliff were taken down in order to prevent danger to the public passing on this said embankment.

The wooden flooring of the wharf and part of the floor-stringers were renewed on a length of 100 feet, starting from the shore.

Three hardwood fenders, at the outer end of the wharf, were replaced; also minor repairs were made to the mooring posts, waiting-room, flooring, moveable slip and winches.

The work was commenced on August 4, 1908, and abandoned on November 14, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,612.41.

9-10 EDWARD VII., A. 1910

BARACHOIS DE MALBAIE.

Barachois de Malbaie is a large parish and municipality situated at the head of Malbaie bay some 12 miles east of the county town Percé.

Barachois, on account of the large area of rich farming lands situated along the four rivers that form the Barachois; on account of the important lumber firms that have built their mills along the Barachois, and on account of its first-class fishing harbour, now that the government has started a training pier to improve the entrance, may be considered the most promising centre in Gaspé peninsula.

During the fiscal year 1904-5, a crib, 100 feet by 25 by 18, was partly built and placed in position at 590 feet from extreme high water mark and the approach thereto, from said high water mark, built of fascine mattresses with brush and stone filling commenced.

During the fiscal year 1905-6, the 100 foot crib was completed; the roadway filled, with the exception of an average of 5 feet, and a new crib, 120 feet long, built and secured into position.

During the fiscal year 1906-7, the outside crib of 120 feet was built up to 4 feet below coping and partly ballasted.

During the fiscal year 1907-8, a new crib of 100 feet was built and placed in position and the balance of the work was built up to coping and partly ballasted. A small crib of 25 feet, placed on the outside, was brought ashore by a heavy storm before it was fully ballasted and had to be replaced in position.

During the last fiscal year, the superstructure of the works commenced was completed and some 200 feet of the face work was sheathed with piles. A crib of 100 feet was commenced and materials, timber and stone ballast were bought to complete said crib.

Expenditure, \$5,151.70.

BASSIN.

The Bassin is a large parish at the centre and west end of Amherst island. The population is composed of Acadian fishermen engaged mostly in cod fishing. On the south shore of Amherst island, opposite the said fishing establishment, there is no shelter whatever. A small breakwater was decided upon. Two cribs, 66 by 25 by 20 feet, were built, secured into place and completed.

Two schooner loads of spruce timber were delivered at the Bassin last summer, but the construction of the extension had to be delayed until next year.

Expenditure, \$1,182.10.

BELOEIL.

Beloeil is an incorporated village in Verchères county, on the north side of the Richelieu river, and a station of the Grand Trunk Railway, 21 miles northeast of Montreal.

It has an express office, one store, two hotels, one saw-mill and the works of the Hamilton Powder Company. Population, 400.

South of the Grand Trunk Railway bridge, which crosses the river at Beloeil, the government built a number of piers and booms on both sides of the channel to facilitate the passage of steamers and barges coming down the rapid current of the river, and going through the narrow passage of the draw-bridge. There were eight piers, four on either side of the channel, distant from 80 to 100 feet from one another.

From 1885 until 1888, some slight repairs were made to the booms at a cost of \$353.43. In 1890-1, three of the piers were rebuilt from low water line, and some slight repairs were made to the booms at a cost of \$1,500.35.

In 1891-2, two other piers were rebuilt from the water line at a cost of \$1,193.38. In 1895-6, some slight repairs were made to the booms; cost \$144.79.

SESSIONAL PAPER No. 19

In 1896-7, it was found that the guide piers, on the west side of the river, were in such bad condition that they could not be properly repaired, and an entirely new line of guide works was adopted. It was decided to build a solid cribwork wall from the Grand Trunk Railway pile abutment upwards; to remove the four old piers and booms, and to dredge a wider channel for the free passage of boats.

The work, carried out by day labour, was commenced during that fiscal year and completed in 1899-1900, at a cost of \$17,444.67, including the dredging.

In 1903-4, the top of the four guard piers, on the east side of the river, were renewed to a height of 4 to 6 feet, and sheathed with hemlock 6 inches thick; cost \$1,673.34. These repairs were continued in October, 1904, and completed at the end of November of the same year.

In July, 1905, the booms on the eastern side of channel were completely renewed at a cost of \$607.24. On the western side of channel, the wooden flooring of guide piers was removed and replaced with earth and sand. Further minor renewals to the boom, below the bridge, were also made. All these repairs done by day labour, were completed at the end of October at a total cost of \$1,173.19.

During November, 1906, and February, 1907, the guide piers on the western side of river was refilled with gravel, a small crib pier, adjoining the old Parizeau wharf on western side of river, below G.T.R. bridge, was built to moor the downstream end of boom, and a timber arrangement to the middle of boom, on east side of river, opposite guide pier, was made so as to prevent its overturning by the channel and vessels. Total expenditure during fiscal year was \$1,103.12, exclusive of some dredging.

At the end of October, 1908, the two upper rows of 12 by 12 inch timber of guide pier were renewed, the slanting face of ice-pier on opposite side of channel was resheathed with 10-inch pine.

Total expenditure during last fiscal year, \$1,151.60.

BERTHIER.

(*En bas.*)

The village of Berthier, in the county of Montmagny, is on the south shore of the St. Lawrence, 29 miles below Quebec. A large traffic in farm produce is carried on through the coasting steamer *Champion*, which plies daily between Quebec and Berthier.

Spring tides rise 21 feet; neaps, 13 feet.

During the fiscal year 1908-9, the following works were executed on the wharf: 34,000 feet B.M. spruce deals, 3 inches thick, were used to renew the flooring and the face sheathing; five fenders and four snubbing posts of oak were replaced with the same kind of timber. Repairs were made to the three slips of the wharf, which were badly damaged by ice during the winter, and about five toises of stone were added.

The freight shed, capping pieces and mooring posts received two coats of paint, and the flooring was repaired throughout.

The work was begun on August 13, and completed by October 30.

Amount expended, \$1,399.12.

BIE.

Bie, on the south shore of the St. Lawrence, in the county of Rimouski, about 170 miles below Quebec, is a favourite summer resort. Its harbour affords the best natural shelter for vessels of moderate draught.

Spring tides rise 16 feet; neaps, 8½ feet.

In order to provide more facilities for landing; also to accommodate the traffic with the north shore, which is growing more extensive every year, it was decided to build a wharf where vessels could land at all stages of the tides. The work will

9-10 EDWARD VII., A. 1910

consist of an approach, 500 feet long, from Pointe à Côté to Ile au Massacre and following the northeast shore of that island, a distance of 550 feet, and an outside section, 400 feet in length, giving a depth of $10\frac{1}{2}$ feet at low water spring tides.

During the fiscal year ended March 31, 1909, the approach to the proposed wharf was completed. The work, which was performed by day labour, was commenced on September 22, and closed on November 30.

As it was rather late in the season, the force of men was divided into two crews, one working on the approach on Ile au Massacre and the other repairing and improving the road leading from the highway to the wharf. A length of 200 feet of cribwork, 22 feet wide, was built to complete the approach, and the end is now 60 feet from the low water mark; the section to be constructed by contract will start from there.

A good deal of work was also done to improve the road leading from the village to the wharf; a large quantity of rock was blasted, and the roadway was finished by the addition of a layer of sand 6 inches thick. Ditches and culverts were built where found desirable.

The flooring of the old wharf was renewed on a length of 200 feet, as also the stringers and capping pieces; and general repairs were made throughout the wharf.

The expenditure on these works during the last fiscal year was \$7,103.32.

BLACK CAPE.

Black Cape is situated on the north shore of the Baie des Chaleurs, in the township of New Richmond, county of Bonaventure.

During the fiscal year, 1907-8, in order to provide accommodation to fishermen and to give shelter to boats, the sum of \$500.38 was expended in the construction of a protection crib 50 feet long by 10 feet wide, and 8 feet high and a breakwater, 56 feet long, 17 feet wide and 9 feet high.

During the last fiscal year, an addition to the breakwater, 40 feet long, 17 feet wide and 12 feet high has been built at a cost of \$349.95.

The construction, carried on by day labour, was begun on September 1 and completed on the 23rd of the same month.

BONAVENTURE.

Bonaventure East, an important fishing settlement in the county of Bonaventure, is situated on the north shore of the Baie des Chaleurs, 7 miles west of New Carlisle, the shiretown of the county.

During the fiscal year, 1903-4, a contract was entered into for the construction of a breakwater.

This construction, which consists of a cribwork abutment, 20 by 20 feet; five crib blocks, 20 by 20 feet, and an outer block of 460 feet, forming a total length of 700 feet, by 20 feet wide, was completed during the fiscal year 1904-5, at a cost of \$15,690.

During last fiscal year, the spaces between the blocks were sheathed with 3-inch deals; some fenders, carried away, were replaced. These repairs were commenced on October 16 and completed on November 12, at a cost of \$199.51.

RIVIÈRE BONAVENTURE.

Bonaventure river, in the parish of St. Bonaventure, county of Bonaventure, is one of the largest rivers in the Baie des Chaleurs, and the harbour, at its mouth, is the most important lumber shipping harbour of the Gaspesian peninsula.

In years gone by, the channel, leading into the inner basin or harbour was deep enough to allow ocean vessels to enter the basin, with plenty of water to load and float alongside the bank; but, like mostly all rivers flowing into the sea, the sudden deposition of materials carried by the river, when current strikes a larger body of

SESSIONAL PAPER No. 19

water, the prevailing winds blowing toward shore combined with long periods of drought, are the cause that the channel is now completely blocked and closes up the entrance, at low water, for the smallest boats.

At the last session of parliament, in order to protect the outgoing current from being deflected or retarded by the prevailing seas, also to direct that current so that it will tend to scour out and deepen the channel rather than silt it, it was decided to build a training pier on the west side of the channel.

On January 29, 1900, a contract was entered into for the construction of a training pier, 1,200 feet long, by 22 feet wide, for the sum of \$24,500.

The construction, which consists of a round timber cribwork, was begun on May 1 and was nearly completed when the work was suspended at the end of December.

The amount expended during the fiscal year 1908-9 is \$18,492.50.

BONAVENTURE WEST.

Bonaventure West, also called Petit Bonaventure is a fishing settlement between the village of St. Bonaventure and St. Charles de Caplan, in the county of Bonaventure.

During the fiscal year 1908-9, the descent to the beach was repaired, and the cribwork, to protect it against the action of the sea, was extended.

The work was begun on August 25, and completed on September 8, at a cost of \$199.88.

CAP A LA BALEINE.

Cap a la Baleine is situated in the county of Rimouski, on the south shore of the St. Lawrence, 12 miles below Matane; it is a cove used as a harbour by fishermen.

Some years ago, a block of crib-work, filled with stone, was built by private parties, in the centre of the cove. A few years later, the block was upset by ice and the stone obstructed the harbour.

During the month of November, from the 7th to the 18th, of the last fiscal year, the government expended the sum of \$200 in removing these obstructions.

CAPE COVE.

Cape Cove, county of Gaspé, is an important fishing station on the coast of Gaspé, some 9 miles from Percé, the shiretown. It is a port of call for steamers plying between Montreal and Pictou, and between Dalhousie and Gaspé Basin.

In 1905, the department decided to construct a landing pier at this place, and, in August, 1906, a contract was entered into for the construction of a length of 450 feet, for the sum of \$13,300. The work was completed in November, 1906.

During the last fiscal year, the shore end on the east face of the pier, was sheathed for a length of 200 feet and the ballast, that had settled all along the work, was replaced, and timber was brought in January and February.

Expenditure, \$2,068.19.

CAPLAN.

The municipality of St. Charles de Caplan, county of Bonaventure, is one of the largest municipalities of the Baie des Chaleurs; its population, about 2,000, is composed mostly of fishermen and farmers. It is a station on the Atlantic and Lake Superior Railway, some 67 miles from Metapedia.

During the fiscal year, 1908-9, the sum of \$705.21 was expended in repairs and improvements to the four descents to the beach, previously built in the municipality by the government.

The above expenditure is divided as follows:—

McLellan's Beach.—A small breakwater, 40 feet long, 15 feet wide and 7 feet high, has been built.

9-10 EDWARD VII., A. 1910

The construction was begun on September 5, and was completed on the 11th of the same month.

Robichaud's descent to beach.—To protect the descent at that place, a crib, 50 feet long, 16 feet wide, and 10 feet high has been built at the foot of the descent.

The work was commenced on August 27, and was completed on September 9.

Poirier's descent to beach.—To protect the descent against the earthslip, a retaining wall, 40 feet long, 17 feet high has been built alongside.

The construction was begun on the 6th, and completed on November 12.

Arseneault's descent to beach.—The descent at that place has been widened upon a distance of 75 feet, and a cribwork 45 feet long, 17 feet wide and 9 feet high, has been placed at the foot of the descent for protection.

The work was commenced on the 5th, and completed on September 19.

CAPLAN RIVER.

Caplan River is an important settlement in the municipality of St. Charles de Caplan, county of Bonaventure.

During the fiscal year, 1908-9, the training pier, on the east side of the river, upon a distance of 150 feet, has been close sheathed with 3-inch deals, driven into the bottom; on the west side, the protection work has been undone and rebuilt upon a distance of 50 feet. At the close of the season, an additional crib 60 feet long, 15 feet wide was ready to be sunk.

The construction, carried on by day labour at a cost of \$870.13, was begun on September 23, and suspended on November 29.

CAP SANTE.

The village of Cap Santé, the chief town of the county of Portneuf, is situated on the north shore of the St. Lawrence, 5 miles below Portneuf, and 31 miles above Quebec.

Spring tides rise $14\frac{1}{2}$ feet, neaps, $8\frac{1}{2}$ feet.

During the last fiscal year the sum of \$175.11 was expended in renewing flooring of landing slip with 3-inch hemlock deals, in an area of 9 by 52 feet. Minor repairs were also made to the shed and to the sheathing of the south and southeast corner of the wharf.

The work was commenced on June 8 and completed on the 30th of the same month.

CAP ST. IGNACE.

The village of Cap St. Ignace, in the county of Montmagny, is situated on the south shore of the St. Lawrence, 46 miles below Quebec.

To accommodate the traffic and to provide facilities for the landing of craft, of which the place was entirely deprived, it was decided to build a wharf, and, on December 15, 1908, a contract was entered into for the construction of the work; the contract price being \$14,913.

It comprises a structure of open-faced cribwork, 750 feet long, 22 feet wide for a length of 702 feet and 30 feet wide for remaining 48 feet or head block, together with an approach cut into the bank of the river, 103 feet in length, 22 and 30 feet wide at bottom and top respectively, with an incline of 1 foot vertical to 10 feet horizontal.

At the close of the fiscal year, the construction had not yet been commenced.

CARLETON.

Carleton, Bonaventure county, is one of the most important places on the north shore of the Baie-des-Chaleurs, and also a renowned summer resort.

SESSIONAL PAPER No. 19

During the fiscal year 1908-9, the south side of the wharf, upon a distance of 100 feet, starting from low water mark, has been pile-sheathed, piles being driven from 10 to 15 feet into the bottom; stringers have been renewed; the flooring, upon a distance of 135 feet, by the full width of the wharf, has been taken up and raised to the level, and bad places have been renewed.

The repairs, carried on by day labour, were begun on September 14, and were completed on December 9.

The old beach protection, situated a few acres west of the wharf, has been replaced by a new round-timber construction, 350 feet long, 6 feet wide and 4 feet high, well ballasted with stone.

The construction, which was carried on by day labour, was commenced on October 5, and suspended on November 24.

CAUGHNAWAGA.

Caughnawaga, or Sault St. Louis, is a post village in Laprairie county, situated on the south shore of the St. Lawrence, opposite the village of Lachine, 10 miles from Montreal and 15 miles from Beauharnois. It is entirely inhabited by the Indians of the Iroquois tribe. Population, 2,300.

In December, 1908, the department began extensive renewals on the old wharf built by the Grand Trunk Railway Company. The crib was razed down to lowest water level and rebuilt, with 40-foot return wings at each end, in close-faced crib-work, fully ballasted with stone. The roadway was improved with stone and earth. Two coal barges, sunk many years ago, some 40 feet east of wharf, were blasted to pieces with dynamite and removed.

Work completed March 31, 1909, at an expenditure of \$3,172.18.

CEDARS (RIVER ST. LAWRENCE).

Cedars is a post settlement in Soulanges county, on the St. Lawrence river, 3 miles from Cedars station on the G.T.R., 29 miles west of Montreal, and 5 miles from Vaudreuil. Near by, in course of erection, is a power-house of the Montreal, Light, Heat and Power Company. Population of village, 344; of parish, about 1,500.

The landing pier at Cedars, first built by the local authorities, was taken over by the Crown in 1881 and immediately reconstructed at a cost of \$3,761.01.

In June and July, 1908, a sum of \$578.25 was expended in renewing the whole of the flooring of headblock in 3-inch pine, and in strengthening its two outside corners.

The structure now consists of:

A crib headblock, 115 by 24 feet, including 15 feet ice-breaker, outer face sunk in $7\frac{1}{2}$ feet of water at lowest level.

An approach, 55 by 15 feet, and a store-house.

This wharf was transferred to the control of the Department of Marine and Fisheries in September, 1896.

The Crown has another wharf in the same locality, but two miles north on the southeast bank of Soulanges canal, near the swing bridge.

CEDARS (SOULANGES CANAL).

In October, 1900, the construction of a wharf on the southeast bank of the Soulanges canal near the swing bridge was begun; it was completed June following, at a cost of \$2,768.40.

The structure consists of a pile block, 98 feet long, 30 feet wide, outer face standing 15 feet high in 9 feet of water at mean level of canal, and of a store-house, 13 by 24, adjoining said block.

During September, October and November, 1908, some floor stringers were repaired and the whole flooring renewed in 6-inch concrete mixed 1-3-5 and properly

9-10 EDWARD VII., A. 1910

reinforced. The cap piece was also renewed in pine and the store-house painted. Expenditure, \$979.14.

CHAMBORD.

Chambord, in the county of Chicoutimi, is situated on the southeast side of Lake St. John, 12 miles east of Roberval.

Chambord is the junction of the Quebec and Lake St. John Railway for the Roberval and Chicoutimi branches.

The wharf at this place was built in 1905 and consists of seven piers, 25 by 20 feet, with a headblock 30 by 50 feet, and an abutment 40 by 20 feet.

The work done during the fiscal year 1908-9 was the repairing of the approach which had been washed away.

Total amount expended, \$50.50.

CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on the south shore of the Saguenay river, 71½ miles above Tadousac, at the head of navigation. The Richelieu and Ontario Navigation Company has a daily service from Quebec to Chicoutimi, during the season of navigation, carrying passengers, freight and mail.

The work done during the fiscal year 1908-9, was the construction of a new pier, 13 feet by 20 feet and 33 feet in depth, at the west end of the present wharf.

The front of the old wharf, for a length of 128 feet and a height of 15 feet, was rebuilt in concrete; close-piles were driven in front of the said wharf to strengthen the substructure and make a good footing for the concrete; the inside of the concrete wall was filled with stone, and a concrete floor was built, but not completed.

The wooden mooring posts were replaced by cast iron bollards.

Work was started on April 22, and suspended on November 30.

On January 27, 1908, a contract was entered into, in the sum of \$52,500 for the construction of an extension, 500 feet long; on July 11, a change was made in the location of the work, the additional cost to be \$2,955; it was also decided to reduce the length to 400 feet; the extension is to be parallel with the front of the old wharf, with a return of 350 feet towards shore.

The work done during the fiscal year 1908-9, was the sinking of four piers, of 100 feet each in length, making a total length of 400 feet; 130 feet of cribwork was built at right angles with the front of the wharf; all these piers have been partly filled with stone. The piers were sunk in 15 feet of water at low water spring tides, the two first piers have a total height of 38 feet, and the remainder are about 22 feet in height.

Spring tides rise 17 feet; neaps, 9 feet.

Total expenditure during last fiscal year, \$49,078.70.

CLARKE CITY.

(Seven Islands.)

Clarke City is situated in the bay of Seven Islands, Saguenay county, on the north shore of the Gulf of St. Lawrence, about 300 miles below Quebec.

The wharf is being built at a point called Pointe Noire, which is situated on the south shore of the bay; from there a railway line, 9 miles long, has been built to the falls of Ste. Marguerite river, where the North Shore Power Railway Navigation Company are constructing a dam and erecting a pulp mill of proposed initial capacity of 250 shipping tons, and final capacity of 500 shipping tons of pulp per day. This pulp will be carried on the railway, from the mill to the wharf, and there, transferred to steamers.

SESSIONAL PAPER No. 19

During the session of parliament of 1903, the sum of \$25,000 was voted towards the construction of a wharf at Pointe Noire, and, during the session of 1904, a further sum of \$60,000 was voted to buy, from the North Shore Power Railway and Navigation Company, the part of the wharf built by them, for the sum of \$34,433.95, and a certain quantity of timber and iron to the value of \$21,485.34, the balance to complete the work already begun.

By order in council, March 1, 1904, the transfer by the company was accepted, and an agreement entered into with the company for the performance of the work required.

The work already done in 1903 by the North Shore Power Railway and Navigation Company, and as bought by the department, consisted of a stone approach, 575 feet long, and one crib, 200 by 30 feet, sunk and built to ordinary low tide level.

Work was resumed on May 21, 1904, and continued till October 27, 1904, when two cribs, 200 feet long by 30 feet wide, respectively, had been sunk in place, the superstructure of these two cribs and of the other one, sunk the year before, was built to 2 feet below the required elevation, and the cribs were partly filled with ballast.

Expenditure for the year 1904-5, \$49,881.02.

During the winter of 1904-5, the second and third cribs suffered damages, and to save the cribs, in 1905-6 certain work was performed to the amount of \$37.50.

During the fiscal year 1907-8, a new contract with the company, North Shore Power, Railway and Navigation, called for the completion of the stone approach, the removal of the broken cribs and the completion of the wharf to its final elevation.

Nothing was done on the stone approach which remained in the same condition it was in 1904. The broken cribs were removed, with the exception of some stone that will have to be taken away on the north side of the wharf.

As to cribwork, no timber work was done on crib 1, but the side pockets were filled, and the middle row of pockets are half-full. Since 1904, till this summer, before any more stone was put in, this crib 1, has settled down one foot; it is now at elevation 115.00.

As to crib 2, the east end was broken under low water; this crib was built up to elevation 107.00, the side pockets are mostly filled, and the middle pockets will have to be filled.

The old crib, 200 feet long by 30 feet wide, that had been sunk in 1904, was removed and replaced by two other cribs, each 100 feet long and 40 feet wide. No ballast floors were put on these, except in four pockets in order to sink them.

The work done during the fiscal year 1908-9, was the completion of the contract work, with the exception of the flooring and 3 feet of the superstructure.

Expenditure, \$9,734.52.

COLERAINE.

Coleraine is a post village and station on the Quebec Central Railway, in Mégantic county, on Black Creek. Population, 100.

On February 18, 1907, a contract was entered into for the construction of a landing pier at the southern end of Lake St. Francis, on lot 13, range 1, township Coleraine, some 13 miles east of the village of the same name. Contract price, \$4,800. It called for the construction of:—

A solid close-faced and stone-filled crib headblock, 70 feet long and 30 feet wide, outside face standing 14 feet 2 inches high in 5 feet of water at ordinary low level.

A stone approach, 325 feet long and 18 feet wide at top, with sides riprapped and sloped $1\frac{1}{2}$ in 1.

A right of way from proposed public road, 53 feet wide and about 325 feet long, together with a deep water lot, 198 feet long and 132 feet wide, were bought from the provincial government.

Construction was begun in the middle of November, 1908, and completed at the end of the following January.

9-10 EDWARD VII., A. 1910

COTEAU DU LAC.

(River St. Lawrence.)

Coteau du Lac or St. Ignace, is a thriving village on the St. Lawrence, 3 miles from Coteau station, on the G.T.R., 36½ miles southwest of Montreal. Population, 500.

In 1888, the construction of a landing pier was commenced at this place and completed in 1889, at a cost of \$6,918.71. The structure consists of:—

1. A crib headblock, 101 feet long and 21 feet wide, with a crib extension, 40 by 47 feet, built from the middle of inner face; outer face standing 15 feet, built in 10 feet of water at ordinary low level.

2. A crib and span approach, 75 by 26 feet.

3. A freight shed of the full width of extension, 40 feet and 20 feet long with through passage way for vehicles.

During September and October, 1908, part of the flooring of headblock and half a dozen stringers of approach were renewed.

Expenditure, \$946.29.

The Crown has another wharf in the same locality, but on the southeast bank of the Soulanges canal.

COTEAU DU LAC.

(Soulanges Canal.)

In October, 1900, the government began the construction of a wharf on the southeast bank of the Soulanges canal, near the swing bridge; it was completed in June following at an expenditure of \$2,738.54. The structure consists of:—

A pile block, 98 feet long, 30 feet wide, outer face standing 15 feet high in 9 feet of water at mean level of canal, and a storehouse, 18 by 24 feet, adjoining said block.

During September, October and November, 1908, some floor stringers were repaired and the whole flooring renewed in 6-inch concrete mixed 1-2-5 and properly reinforced; the cap piece was also renewed.

Expenditure, \$247.79.

CROSS-POINT.

Cross-Point, Bonaventure county, is situated on the north shore of the Restigouche river, opposite the town of Campbellton, N.B. A ferry boat plies every fifteen minutes between Cross-Point and Campbellton.

During the fiscal year 1903-4, a wharf, 455 feet long by 20 feet wide, was built at that place; that wharf being approached at high water only. To facilitate the traffic, which is very heavy during the summer months, an extension, 390 feet long, was commenced during the fiscal year 1905-6, and completed in June, 1907.

During the fiscal year 1908-9, an iron guard, 648 feet long, was placed on both sides of the wharf, three guide piles were also driven at the outer end.

Total expenditure, \$162.

DOUGLASTOWN.

Douglstown, situated in Gaspé bay, is a village of fishermen and farmers, standing on the rising ground at the south side of the entrance to the St. John river. Its population is between 1,600 and 1,800.

During the fiscal year 1907-8, the pier was lengthened by a crib of 80 feet, towards the shore, built up to low water level.

SESSIONAL PAPER No. 19

During the last fiscal year, the new crib was completed and all of the old work raised from 2 to 3 feet, and the materials for a freight shed bought and prepared for construction.

Expenditure, \$4,066.60.

EAST TEMPLETON.

East Templeton village, in the county of Wright, is a landing, 6 miles below the city of Ottawa.

At its session of 1908, parliament revoted \$1,000, to build the wharf commenced by contract, at this place, in 1907.

The contract was completed in April, 1908. During the extraordinary spring flood, the wharf was submerged completely. The debris on the high-level wharf was cleaned away in June, at a cost of \$7.

Expenditure during the year 1908-9, \$520.57.

FABRE.

Fabre village, Pontiac county, on the east shore of Lake Temiskaming, 11 miles south of Ville-Marie, has a public wharf which was built in 1906-7.

The wharf suffered minor damages from the ice and heavy boat traffic. It was decided to improve the structure by sheeting the principal landing face with tamarek and placing fenders on the south side. Materials were procured at a cost of \$136.70, and a few piles were driven early in October with the Lake Temiskaming plant. Owing to the lateness of the season and the urgent work elsewhere requiring the men and plant, it was decided to complete the work during the early spring. A light was maintained on the wharf throughout the season at a cost of \$79.25.

Expenditure during 1908-9, \$215.95.

FATHER POINT.

Father Point, in the county of Rimouski, is situated on the south shore of the St. Lawrence, 6 miles below the town of Rimouski. Most of the ocean liners call to land or take on their pilots. The point is one of the few places on the south shore of the St. Lawrence where deep water can be found at a relatively short distance from land.

A self-registering tidal gauge was established here some years ago by the Department of Marine and Fisheries. There are also a powerful compressed air fog-horn and an acetylene gas light-house.

In the year 1905, a wharf was completed, whose dimensions are 800 feet in length, 32 feet width at the top, with the outer end standing in 18 feet of water, at low water spring tides.

During the fiscal year ended March 31, 1909, the sum of \$562 was expended to place stones on the bottom along both faces and outer end of the wharf.

The work was performed in September, by the aid of a diver, with the view of preventing the scouring and undermining of the bottom by the waves and tidal currents.

A few pieces of hardwood sheathing were also replaced.

During the month of March, 1909, some repairs were done to the wharf, and, with a view to the raising and levelling of the superstructure, spruce was purchased for the sum of \$899.46.

Total expenditure for the last fiscal year, \$2,262.75.

GARTHBY.

Garthby Station is a post village in Wolfe county, (Municipality de Beaulac), on Lake Aylmer, and a station on the Quebec Central Railway. Population, 950.

9-10 EDWARD VII., A. 1910

• At the end of January, 1908, work was commenced on the construction of a landing pier at the foot of St. James street, near the Quebec Central Railway station.

The structure consists of:

1. A close-faced crib headblock, 40 feet long outside face and 30 feet wide, standing $10\frac{1}{2}$ feet high in $4\frac{1}{2}$ feet of water at lowest level.

2. A stone approach, 320 feet long, 12 feet wide, clear at top, with a 12-foot widening on eastern side half way between headblock and shore, leading to a 12-foot slip; sides riprapped and sloped one in one.

Up to March 13, 1908, when work was suspended on account of high water, the wharf had been about 80 per cent completed, at an expenditure of \$3,178.30.

Work was resumed in early August, 1908, and the structure completed at the end of the month with a further outlay of \$1,261.92.

GATINEAU POINT.

Gatineau Point, in the county of Wright, is at the intersection of the Gatineau and Ottawa rivers, 2 miles from Ottawa. In 1885-86, a cribwork wharf was built at this place for local traffic. The structure underwent repairs and was reconstructed in 1904-5.

In March last, the fenders were restored, and sheeted with rock elm at a cost of \$50.

GEORGEVILLE.

Georgeville, a post village in Stanstead county, 9 miles from Smith's Mills and on eastern shore of Memphremagog lake, 10 miles south of Magog station on the Canadian Pacific railway. Population, 300.

The landing pier was built by subscription from the several steamboat companies which kept it in repair until 1888, when its control was assumed by the government.

Extensive repairs were begun in September, 1908. The whole inner side of headblock, north of approach, with a 5 foot return on northern side, towards outside face, was renewed in concrete. This wall, 75 feet long, starts at low water level and stands $5\frac{1}{2}$ feet high, with a depth of 3 feet at bottom. It is reinforced with corrugated iron bars embedded vertically every 8 feet and horizontally, opposite both retreats, 33 inches from outside face. Both sides of approach were covered with 4-inch concrete.

Expenditure, \$1,497.07.

As it stands to-day, the wharf consists of:—

(1) A crib headblock of irregular shape, 75 feet long outside face and from 20 feet wide at northern end to 42 feet near the approach;

(2) A stone approach 156 feet long and from 20 to 23 feet wide, with sides perpendicular;

(3) A freight shed, near northern intersection of approach and headblock.

GRANDE RIVIÈRE.

Grande Rivière, county of Gaspé, is the name of an important fishing centre, some 21 miles southwest of Percé.

One hundred and ten feet of roadway had to be repaired and protected by a timber sheathing.

The outside face was sheathed and sixty-one, 10 by 10, piles were driven, and timber was also bought.

Expenditure, \$2,772.78.

GRINDSTONE

Grindstone is a village on the south side of Grindstone island, 4 miles east of Etang du Nord.

SESSIONAL PAPER No. 19

The population is composed mostly of Scotch farmers and Acadian fishermen.

During the last fiscal year, the foundation for a 100 by 30 foot freight shed was partly built.

Expenditure, \$1,688.03.

GROSSE-ISLE HOSPITAL WHARF.

Grosse-Ile is situated in the river St. Lawrence, some 30 miles below Quebec.

It is used by the government as a quarantine station for the steamers coming up the river St. Lawrence.

During the last fiscal year, the flooring of the old portion of the wharf was completely renewed, as also the floor-stringers. The wooden embankment leading to this wharf was replaced by concrete work. This embankment consists of a concrete wall, 189 feet long by 10 feet high and another wall 57 feet long by 15 high. The macadam flooring of the embankment was repaired, where found necessary.

A new waiting-room and freight shed, surmounted by a lantern tower, was constructed on this wharf.

The work was actually commenced on September 2, 1908, and was discontinued on November 30, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$6,502.45.

HIGH FALLS.

High Falls, Labelle county, a landing at the head of navigation, on the lower reach of the Lièvre river, is 24 miles above Buckingham.

At its session of 1908, parliament granted \$4,000 towards floating landings at different points on the Lièvre.

The floating landing at High Falls was built between September 14, and October 2.

The structure consists of a float, 35 feet by 25 feet, a warehouse, 12 by 16 feet, chained to the shore. The float is built of 8-inch flatted cedar, spiked to cedar cross-ties at 3 feet centres on cedar logs, laid heads and tails. Across the centre, a strip, 7 feet wide, is floored with 1-inch and 2-inch plank, outside and inside the warehouse, respectively. The ends of the warehouse are floored 8 inches higher, for dry storage at maximum loading. When light, the structure draws 26 inches of water and has a freeboard of 8 inches of solid timber, besides the capping and wheel guard. The float has been tested to 12 tons loading without being submerged, and has been found satisfactory in the handling of the traffic at this point.

Expenditure in 1908-9, \$239.31.

HOPETOWN.

Hopetown is a post settlement of Bonaventure county, situated between St. Godfroy and Paspebiac; its population is mostly composed of fishermen.

During the last fiscal year 1908-9, the sum of \$398.14, was expended in repairs and continuation of the two descents to the beach built by the department in this municipality. The expenditure was thus divided:

Ross' Bank Road.—The descent to beach at that place, which was begun two years ago, was continued and nearly completed at the close of the season. The work during the last fiscal year was begun on October 13, and suspended on November 5. Amount expended at that place, \$200.

Miller and Mann's Bank Road.—The descent to the beach was built by the government four years ago. During the last fiscal year, the sum of \$198.54 was expended in the construction of a small cribwork, 28 feet long, 18 feet wide and 6 feet high at the foot of the descent to protect it against the action of the sea. The construction was begun on August 21, and completed on the 28th.

9-10 EDWARD VII., A. 1910

HULL.

Hull, in the county of Wright, is an important industrial centre, opposite the city of Ottawa. The concrete and masonry wharf, built in 1902-3, on the Ottawa river, underwent repairs and was improved from September 8 to October 10.

The wrought iron hand railing was repaired and painted. The warehouse roof trimmings were painted. Three doors in the warehouse, were repaired and painted, and two windows were replaced by doors. A slip, 3 feet deep, 8 feet wide, with an activity of 1 in 4, was built into the low level landing and concrete inclines were built to the new warehouse entries.

Expenditure in 1908-9, \$624.91.

ILE-AUX-COUDRES.

This island has an area of 30 miles and is situated in the river St. Lawrence, some 62 miles below Quebec. The distance from this island to the north shore of the river St. Lawrence is $2\frac{1}{2}$ miles. Its population is 1,500.

During the past fiscal year, the slip on the western side of the wharf was completely renewed; some 100 toise of ballast stone were placed into the cribwork; half of the spruce sheathing of the western face of the wharf was renewed.

The work was commenced on September 3, and was completed on October 31, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$2,193.59.

ILE-AUX-GRUES.

Ile-aux-Grues, or Crane island, is in the River St. Lawrence, 3 miles from the south shore, opposite Cape St. Ignace, in the county of Montmagny; it is about 40 miles below Quebec.

The inhabitants are chiefly engaged in farming.

Spring tides rise 20 feet: neaps, 12 feet.

During the fiscal year ended March 31, 1909, repairs were made to the planking of the wharf, built in 1902.

A middle pathway, 12 feet wide, was placed upon the whole length of the wharf, 750 feet, with spruce deals, 3 inches thick.

An opening, between two piers of the outer end, was closed at the request of navigators. Minor works were also performed.

The work was done between September 8 and 25.

Expenditure, \$585.10.

ILE VERTE.

The village of Ile Verte, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, about 15 miles below Rivière du Loup and 120 miles east of Quebec.

During the fiscal year ended March 31, 1909, heavy repairs were done to the wharf.

On the outer block, 250 feet of capping pieces were replaced and a surface of 960 square feet of flooring was renewed, with nearly all the stringers.

From the outer block, going shoreward, three courses of face timbers, and cross-ties, with the stringers and flooring, have been renewed on a length of 542 feet, by the whole width of the wharf, 20 feet.

The work which was done by day labour, was commenced on August 30, and suspended on October 30.

The amount expended was \$2,808.52.

ISLE PERROT SOUTH.

Isle Perrot, about 7 miles long and 3 miles wide, is in the county of Vaudreuil, at the confluence of Rivers St. Lawrence and Ottawa, and between Lakes St. Louis and

SESSIONAL PAPER No. 19

Two-Mountains. Two bridges, on the G.T.R. and C.P.R., connect it with Vaudreuil and Ste. Anne de Bellevue. Population, about 800.

In 1886-7, a contract was entered into for the construction of a pier on the south shore of the island, about $1\frac{1}{2}$ miles below parish church, consisting of a crib block, 120 feet long, 30 feet wide, with return of 34 by 16 feet, in rear of east end, and sunk in 8 feet of water, at a distance of 581 feet from shore. It was completed in the year 1887-8, at a total cost of \$5,264.26. The approach was built in 1888-9 and 1889-90, at an expenditure of \$7,156.29.

During June, September and October, 1908, the two upper tiers of headblock and about one-quarter of the flooring were renewed; minor repairs were made to crib approach and guard railing; some ballast was also added to headblock.

Total expenditure during last fiscal year, \$597.03.

KNOWLTON LANDING.

Knowlton Landing is a post village in Brome county, on Lake Memphremagog and a port of call of the steamers plying on the lake, 8 miles from Magog station, on the C.P.R., with which it is connected by steamer.

During the fiscal years 1891-2, an extension to the pile wharf, built many years before, was constructed. This extension of 51 feet by 75 feet was built of hemlock piles covered with stringers, and 3-inch planking, at a cost of \$971.22. There is a depth of 9 feet at low water at the end of the present wharf, which permits of steamers calling at all stages of water.

During the next year, six fender piles were driven along the front of the wharf, and three at each corner. A warehouse with waiting-room, 40 by 23 feet, was built on shore immediately west of the wharf, the whole at an expenditure of \$918.09.

In the fiscal years 1899-1900, all the stringers and planking were renewed, also the corner fender-piles, and some repairs made to the store-house and stone approach. The work was carried out by day labour at a cost of \$714.12.

During March, April and June, 1904, several caps and stringers were renewed and general overhauling of the flooring made.

During the last fiscal year, the extensive repairs, commenced in 1907, were completed; they consisted chiefly in renewing the whole of the flooring of headblock with 3-inch pine planks, and in rebuilding the approach entirely in stone. A 2-inch pipe railing with 6-inch cedar posts every 10 feet completing the improvements.

Work was commenced in June and completed in August, 1908.

As it stands to-day, the wharf is composed of a pile headblock 75 by 25 feet, standing 5 feet above low water level, and a stone approach 128 feet long and 20 feet wide at top, with sides riprapped and sloped one in one.

The expenditure, during the last fiscal year, amounted to \$934.20.

LAMBTON.

Lambton, or St. Vital de Lambton is a thriving post village in Beauce county, in rear of Lake St. Francis, 36 miles from St. Francois, the county town, and 15 miles from D'Israeli, $7\frac{1}{2}$ miles from Lambton station (Q.C.Ry.). Population of parish, 2,100.

On February 15, 1907, a contract in the sum of \$7,750, was entered into for the construction of a landing pier at Lambton. It called for:

A solid close-faced and stone-filled crib headblock, 70 feet long and 30 feet wide, the outside face standing 20 feet high in 8 feet of water at extreme low level.

A stone approach, 320 feet long and 18 feet wide at top, with sides riprapped and sloped $1\frac{1}{2}$ in 1.

The work was begun in February, 1907, and finally completed August 25, 1908.

During the last fiscal year, the expenditure amounted to \$5,959.60.

9-10 EDWARD VII., A. 1910

L'ANSE À LA GROSSE ROCHE.

L'Anse à la Grosse Roche, in the parish of Sacre-Cœur, Chicoutimi county, is situated on the north shore of the River Saguenay, twelve miles from its mouth.

During the year 1904-5, a contract was awarded for the construction of a wharf, in the sum of \$9,000. The work was commenced at once and completed in 1905-6. The wharf was 265 feet in length by a width of 20, 30 and 40 feet, built of round logs, in three piers, the outer pier in the shape of an 'L,' 105 feet long and 40 feet wide, at outer end, where there is 16 feet of water, at low water spring tides.

An extension, 20 by 20 feet, was built; a freight shed constructed, and the approach built.

The work done during the fiscal year 1908-9, was as follows: A pier, 30 feet in length by 25 feet in width, which had been demolished by the ice, last spring, was rebuilt and filled with stone; a new sheathing was put on the shore side of the wharf; the slip was raised, and big boulders were blasted around the wharf, so that the boat could land without danger.

Work was started in August and discontinued in November.

Total expenditure for the fiscal year ended March 31, 1909, \$941.43.

LA SALETTE.

La Salette is a village in Labelle county on the east bank of the Lièvre river, 18 miles above Buckingham. On April 26 last, a landslide obliterated part of the village and blocked the river completely. In order to restore traffic, a floating landing was built below the obstruction, between April 27 and May 13. The structure consists of a float, 25 feet by 31 feet built of two tiers of close-laid cedar, upper side flattened, anchored to shore. A shed, 16 by 25 feet, was built on the bank for storage of freight.

At its last session, parliament granted \$4,000 towards floating landings on the Lièvre.

Owing to the landslide completely obstructing river traffic at La Salette, 6 miles below the head of navigation, on the lower reach, it became necessary to grant a bonus towards the maintenance of traffic, which affects several important settlements. Agreements were duly signed between the department and the parties concerned, for the services required. \$200 was paid to Capt. Bothwell for placing the steamer *Mildred* above the landslide. A further amount of \$241 per month, was paid him from June 1 to the end of the navigation season, towards the extra cost of a second crew portaging and looking after freight and passengers at La Salette. For the boat landing, a right-of-way to the public road was obtained at \$50 per annum. In May, temporary services of caretaker for wharf and freight cost, \$52.25.

Expenditure during 1908-9, \$726.17.

LAVALTRIE.

Lavaltrie is a post village in Berthier county, on the St. Lawrence river, 8 miles from Lavaltrie road station on the Canadian Pacific railway, 44 miles northeast of Montreal. Population, 998.

In November, 1907, materials were bought to repair and enlarge the old wharf purchased the preceding year from the Richelieu & Ontario Navigation Company for \$1,800. This property is composed of:—

A crib headblock, 65½ feet by 31 feet, at bottom, and 56 by 31 at top;

A crib approach, 150 by 19 feet, and a right-of-way 50 by 130 feet, leading to public road.

The work done during the last fiscal year was as follows: the headblock was raised to one foot above low water level and rebuilt with a crib enlargement of 40 by 40 feet on downstream side; the old approach was protected by an addition of a

SESSIONAL PAPER No. 19

crib icebreaker, inclined $1\frac{1}{2}$ in 1, and the three upper tiers were renewed; the roadway leading to the wharf was also improved.

Amount expended, \$4,305.97.

LES BERGERONNES.

Les Bergeronnes is situated on the north side of the St. Lawrence river, 18 miles below Tadousac.

In Les Bergeronnes, there are two rivers called Les Grandes Bergeronnes, and Les Petites Bergeronnes, which are navigable for schooners, about 3 miles, at high water; on both rivers there is a sawmill. The channels of the rivers were obstructed by boulders.

At Les Grandes Bergeronnes, during the fiscal year 1908-9, the work done was the removal of boulders at the mouth of this river so as to make a channel for sailing boats. Work was started in August and was discontinued in October.

During the last fiscal year, the channel at the mouth of River les Petites Bergeronnes was enlarged and boulders were removed on a distance of one mile and a half. The work started in September and was discontinued at the end of October.

LES CUISSSES D'ALMA.

Les Cuisses d'Alma, in the Petite Décharge of Lake St. John, is 3 miles from the lake, in the parish of St. Joseph d'Alma, and some 7 miles from the village.

There are three rocks called Cuisses d'Alma, and an island obstructing the Petite Déscharge.

In 1901-2, blasting was done on the east side.

Expenditure, \$575.92.

In the year 1902-3, the east side was completed and a portion of the west side was done.

Amount expended, \$1,229.37.

During the year 1903-4, the blasting was continued and completed on the two points obstructing the Petite Déscharge, and work was begun on the island.

Amount expended, \$1,477.59.

During the year 1904-5, the blasting of the little island below was continued.

Expenditure, \$994.31.

During the year 1905-6, the blasting of the little island was continued.

Expenditure, \$1,015.96.

During the year 1906-7, the work done was the continuation of the blasting at the island below 'Les Cuisses,' to enlarge the channel.

Expenditure, \$996.02.

During the year 1907-8, the blasting was continued to enlarge the channel.

Expenditure, \$994.50.

During the year 1908-9, the work done was the continuation of the blasting commenced in 1901-2, on the little island, below Les Cuisses d'Alma, to enlarge the channel.

The expenditure, during the fiscal year ended March 31, 1909, amounted to \$996.77.

LES EBOULEMENTS.

This village is situated on the north shore of the River St. Lawrence, in the county of Charlevoix, 70 miles below Quebec.

During the last fiscal year, the eastern corner of the wharf that was opened by a steamer in landing was repaired and reinforced, the western corner of the wharf was also reinforced.

The work was executed from 14 to July 23, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$128.85.

9-10 EDWARD VII., A. 1910

LES ESCOUMAINS.

Les Escoumains, in the county of Saguenay, is situated on the north shore of the River St. Lawrence, 21 miles below Tadoussac. A very important saw-mill, the property of the Saguenay Lumber Company, is located there.

On May 7, 1904, a contract was entered into with Messrs. Bernier & Beaulieu for the construction of a wharf.

Work was commenced on July 25, 1904, and completed in the following year; it consisted of a wharf 350 feet long by 25 feet wide, being 30 feet in height and 8 feet of water at the outer end.

The work is of round logs open-face cribwork, with stringers 12 inches by 12 inches and a planking of 3 inches. The wharf is sheathed with 4-inch planking. Fenders 8 inches by 10 inches are placed at every 8 feet, the whole is fully ballasted with stone.

The blasting of boulders at the entrance to harbour was also continued.

The work done during the fiscal year 1908-9, was the completion of the 200-foot extension commenced the previous year.

Total expenditure during the last fiscal year amounted to \$6,547.50.

LIMOILLOU.

Limoilou is a small town situated on the north shore of the River St. Charles, opposite to Quebec.

On September 16, 1907, a contract was entered into for the construction of a landing and protection wall for the sum of \$2,600.

The work consists (a) of an open-faced stone filled timber crib of a total length of 90 feet and a width of 40 feet having, at the southern end, a culvert built of close-faced timber. The timber used is pine and spruce;

(b) An earth embankment at each end of the wooden cribwork, the north portion of said embankment having a length of 174 feet and a width of 40 feet at the top, having the western side in riprapped stones and sloped one in one. The whole of the top of this landing and protection wall is formed of an 8-inch layer of macadam stones covered with a 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The western side of the earth embankment is made of large hand-laid stones having at least 30 inches in length and 18 inches wide and deep embedded alternately endwise and sidewise and perpendicular to the slope.

During the fiscal year 1907-8, the whole of this work was completed apart from the macadam covering. This macadam covering was completed during the fiscal year 1908-9.

On April 8, 1908, a second contract was entered into for the prolongation of the landing and protection wall for the sum of \$400.

The work consists of an earth embankment of a total length of 67 feet and a width of 40 feet at the top, having the western side riprapped stones and sloped one in one. The whole of the top of this work is formed of an 8-inch layer of macadam stones covered with 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The western side of the earth embankment is made of large hand-laid stones having at least 30 inches in length and 18 inches wide and deep embedded alternately endwise and sidewise and perpendicular to the slope.

This second contract was executed and completed during the last fiscal year.

Expenditure for fiscal year 1908-9 was \$2,698.80.

L'ISLET.

The village of L'Islet, in the county of the same name, is situated on the south shore of the St. Lawrence, 50 miles below Quebec. Spring tides rise 21 feet; neaps, 13 feet.

SESSIONAL PAPER No. 19

The wharf has a length of 1,105 feet and a width of 31 feet, with a head block 116 feet wide. It was substantially built with close-faced cribwork; the superstructure is now in an advanced state of decay and altogether worn out.

During the fiscal year ended March 31, 1909, temporary repairs were performed. On the west and north sides of the headblock, three courses of face-timbers were renewed; the stairways were repaired and made serviceable, the pavement on the outer end was repaired and many stringers were replaced, twenty pieces of hardwood sheathing were renewed, with also three mooring posts. Other minor works have been performed all along the wharf. The work was done by day labour, between August 22 and September 29.

Amount expended, \$820.56.

LOTBINIERE.

The village of Lotbiniere, in the county of the same name, is situated on the south shore of the St. Lawrence, 40 miles above Quebec. It has no railway communication, and entirely depends, for exchange of supplies, on bateaux and steamers from Quebec.

On August 10, 1908, authority was received to expend by day labour the sum of \$1,200 in improving the approaches to the government wharf. Work was commenced on August 13 and completed on October 22, it consisted in raising and levelling the inshore roadway, and in constructing a substantial and permanent culvert at the creek crossing the roadway.

Total amount expended during the last fiscal year was \$982.09.

MAGUASHA.

Maguasha is situated at the head of the Baie des Chaleurs, in the county of Bonaventure, opposite the town of Dalhousie, N.B., some 12 miles west of Carleton. There is a ferry between Dalhousie and Maguasha.

The wharf was constructed during the fiscal year 1904-5, at a cost of \$7,500.

Spring tides rise 9 feet 5 inches.

During the last fiscal year 1908-9, the shore pier of the wharf, which had sunk, was raised up two feet, and the flooring renewed. In order to protect the stone approach, which was washed out, a round timber crib, 27 feet long, 12 feet wide and 7 feet high, well ballasted, sheathed and covered with 5-inch planks, was constructed at the west side of the approach. A guard was placed on the east side of the wharf from the shore to the slip, a davit was also placed at the outer end of the wharf.

The work was carried out by day labour at a cost of \$350.30, was commenced on the 6th and completed on October 30.

MARIA.

Maria, a prosperous village on the north shore of the Baie des Chaleurs, county of Bonaventure, is a station on the Atlantic and Lake Superior railway, about 10 miles northeast of Carleton. Population, 2,300. Spring tides rise 9 feet.

During the fiscal year, 1902-3, the department constructed a wharf. The structure has a total length of 932 feet, and a uniform width of 20 feet.

At the last session of parliament, the sum of \$3,000 was voted towards an addition to the present wharf.

During the fiscal year 1908-9, the sum of \$2,471.71 was expended to buy stone and timber.

MARIA CAPE.

Maria Cape, at the west part of the parish thus called, Maria Cape; during the high tides of the spring and fall, the sea washes out the bank and causes frequent landslips which render the public road dangerous.

9-10 EDWARD VII., A. 1910

To avoid accidents and to protect properties, a round-timber construction, 330 feet long, 6 feet wide and 4 feet high, well ballasted with stone, was placed at the foot of the cape.

Total expenditure, \$742.15.

MASSON.

Masson, Labelle county, also known as Buckingham Junction, 18 miles east of Ottawa, is the outlet for a district having a population of 6,000 inhabitants. The permanent wharf on the Ottawa river, near the mouth of the Lièvre river, built in 1905-6, underwent certain repairs between September 12 and October 14.

The fenders (hemlock) were renewed in rock elm. The steps in the high level slip, which interfered with loading of horses, were shifted. The railing was straightened and high level approach was reggraded. The low level freight shed door repaired and the concrete floor was raised for better drainage.

Expenditure in 1908-9, \$377.02.

MATANE.

The village of Matane, in the county of Rimouski, is situated on the south shore of the St. Lawrence, at the mouth of the River Matane, 240 miles below Quebec, and 30 miles from Little Metis, the nearest point on the Intercolonial Railway.

It contains extensive sawmills and important shipments of lumber are made to European markets from this place.

A railway is now under construction to connect Matane with Ste. Flavie station on the I.C.R.

During the fiscal year ended March 31, 1909, the breakwater, standing on the west side of the mouth of the River Matane and running parallel to it, having been badly damaged during a heavy storm, was thoroughly repaired. It consists of nine piers connected by platforms, the whole aggregating to 500 feet in length. All the superstructure was renewed, in some places to a depth of 6 feet; the front sheet-piling was also repaired, and a new decking was laid on; 6 toise of stone were added, where needed.

The work done by day labour, was commenced on August 17 and completed about January 15.

Repairs were also done to the shed standing on the government wharf inside the river; ladders were placed on the breakwater and on the wharf. Spring tides rise 15 feet; neaps, 8 feet.

The whole expenditure for the year amounted to \$2,473.35.

MISTOOK.

Mistook, in the township of Delisle, is situated on the Grande Décharge of Lake St. John, in the county of Chicoutimi. It is also called St. Cœur de Marie.

The wharf at this place, commenced in 1904 and completed in 1907, is built on piers of 20 by 30 feet, with spaces of 25 feet; the last pier is 30 by 30, making a total length of 402 feet; the average width is 22 feet and 40 feet at outer end; there is 8 feet of water at low water.

The work done during the fiscal year 1908-9, consisted in replacing the flooring for a length of 182 feet, and in sheathing and raising four piers which were also fully ballasted with stone.

Work started on August 1 and was completed on October 1.

The total amount expended during the fiscal year was \$1,980.04.

MONTMAGNY.

Montmagny, in the county of the same name, is on the south shore of the St. Lawrence, 37 miles below Quebec.

SESSIONAL PAPER No. 19

It is a thriving little town of over 2,000 inhabitants; important shipments of lumber are made by the Price Bros. Co. to European markets.

Besides a pulp mill, there are also two foundries and iron works. The town is built on both sides of Rivière du Sud, which has a perpendicular fall of 20 feet and empties into the St. Lawrence; below the fall, the river expands and forms what is called the 'basin,' affording shelter from winds for vessels of moderate draught.

Near the entrance of the basin, on the west side of it, stands the government wharf, but, owing to certain conditions of the bottom and the want of proper shelter, this wharf does not meet the requirements of the place.

To accommodate the growing traffic and to provide for the necessary shelter, the department decided to build another wharf at the rear end of the basin, and on December 30, 1907, a contract was entered into for the construction of a landing pier of the following description: a shore section or approach open-faced, 220 feet in length and 20 feet in width, together with an outside section, close-faced, 125 feet long and 30 feet wide on top, with a batter of one in twelve on the sides and outer end; the two sections forming an angle of $114^{\circ} 50'$. Contract price, \$11,500.

The work was commenced on the first day of June, 1908, and the final estimate was forwarded on September 29.

Spring tides rise, 21 feet; neaps, 13 feet.

During the month of September, the sum of \$96.56 was expended to make some repairs to the flooring of the outside wharf, and to the building standing on shore near the wharf.

MOOSE BAY.

Moose Bay is a small settlement about midway between the wharfs of Piopolis and Woburn, near the southwestern end of Lake Mégantic.

The wharf commenced in March, 1908, was completed at the end of March, 1909. The structure consists of:

1. A crib headblock, 40 feet outside face and 30 feet wide, open-faced under water and close-faced above, standing 13 feet high in 7 feet of water at lowest level, whole headblock covered by a shelter with shingle roof resting on posts.

2. A crib approach, 105 feet long and 20 feet wide, also open-faced under water and close-faced above, with guard railing on both sides.

3. A stone approach, 65 feet long and 20 feet wide at top, with sides riprapped and sloped one in one.

Total expenditure during last fiscal year, \$2,094.28.

MURRAY BAY.

Murray Bay is situated in the county of Charlevoix, on the north shore of the River St. Lawrence, 83 miles below Quebec.

During the last fiscal year, the northeast corner of the wharf which had been cut away by the ice, was completely renewed, from low tide mark to the flooring, and further reinforced by eight fenders of rock-elm, 12 inches square.

The work was commenced on October 14, and completed on December 5, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,948.93.

NEW CARLISLE.

New Carlisle, the shiretown of the county of Bonaventure, is situated on the north shore of the Baie de Chaleurs, 65 miles from Campbellton, N.B. It contains three churches, two hotels, several stores, a telegraph office, &c. It is the terminus of the Atlantic and Lake Superior Railway, and the starting station of the Quebec and Western Railway.

During the last fiscal year 1908-9, the sum of \$4,648.56, was expended in the construction of a round-timber cribwork, 120 feet long and 20 feet wide, along the east

9-10 EDWARD VII., A. 1910

side of the wharf. At the close of the season, the crib was built up to 2 feet above high water and well protected for the winter.

The construction, which was carried on by day labour, was begun on August 19, and suspended on November 25.

Total amount expended, \$4,648.56.

NEW CARLISLE WEST.

New Carlisle West, also called Babin's road, is a meeting place for fishermen and is situated about 3 miles west of New Carlisle village, county of Bonaventure.

During the fiscal year 1907-8, in view of the construction of a small breakwater at that place to shelter fishing boats, the sum of \$300 was expended to purchase timber.

During last fiscal year 1908-9, a small breakwater, 100 feet long, 14 feet wide and 12 feet high, was built. It is a round-timber construction, well ballasted with stone.

The construction was carried on by day labour, at a cost of \$449.74; was begun on the 2nd and was completed on the 31st of October.

NEWPORT.

The village of Newport, in the county of Gaspé, is situated at the mouth of the river of the same name, on the north shore of the Baie des Chaleurs, 88 miles east of Campbellton, N.B.

The top of the wharf, damaged in the fall of 1907, was repaired at a cost of \$408.35.

NEW RICHMOND.

New Richmond, Bonaventure county, is situated on the north shore of the Baie des Chaleurs, some 60 miles from Metapedia, and is a station on the Atlantic and Lake Superior railway. It contains two churches, several schools, shingle mills, grist mill and one planing mill. It is one of the largest lumber manufacturing centres in the Baie des Chaleurs. Large quantities of dressed lumber and railroad ties are shipped to the United States.

Population, 2,500. Spring tides rise 8 feet.

In 1904, a landing pier, consisting of a stone approach, 15 feet long and 20 feet wide; a crib work abutment, 20 by 20 feet; 19 cribwork piers, 20 by 20 feet, and an outer block, 100 feet long by 30 feet wide, placed at intervals of 20 feet and spanned over with stringers was completed.

At the last session of parliament, the sum of \$2,000 was voted towards an addition to this landing pier.

During the last fiscal year, 1908-9, the sum of \$2,001.23 was expended to purchase timber.

NORWAY BAY.

Norway Bay, Pontiac county, is located on the north shore of Chats lake, an expansion of the Ottawa river. There is a ferry traffic across to Sand Point, Ont. This place is a summer resort of some importance.

At its session of 1908, parliament granted \$3,000 towards the construction of a pilework wharf.

Owing to the site on the Upper Ottawa Improvement Company's wharf becoming available in the fall of 1908, it was decided to defer construction.

In March, 1909, authority was given to expend \$100 on a temporary landing at this place. Materials were procured at a cost of \$27.25. Construction of said temporary landing will take place at low water during the coming season.

SESSIONAL PAPER No. 19

NICOLET HARBOUR.

Nicolet, a flourishing town in Nicolet county, at the foot of Lake St. Peter, on the Nicolet branch of the Intercolonial Railway, 6 miles from St. Gregoire on the Grand Trunk Railway and 8 miles northeast of Montreal. Population, 2,442.

In order to protect the schooners loading in the harbour from the force of storms on Lake St. Peter, a jetty was commenced in 1881, and extended in successive years. It was originally 3,500 feet long, made of two rows of close piles, 13 feet distant, and filled with stone. It stood 4 feet above low water with an average height of 5½ feet.

Out of the expenditure 1904-5, a small wharf was built during February and March on the river bank about 1½ miles north of Nicolet, opposite the old Ball mill. It was built of close-faced stone-filled cribwork, 80 feet long, including ice-breaker, inclined 1½ in 1, and 31 feet wide. It will be of great utility to the Nicolet trade, as this point is the nearest to the town that boats of 6 feet draught can reach safely.

During June, July and August, 1908, some 410 toise of stone were added to jetty, and a freight shed, 52 by 32 feet, was erected on the Nicolet wharf, built in 1904-5.

Expenditure during last fiscal year, \$154.

NOTRE DAME DU LAUS.

Notre Dame du Laus, in Labelle county, is 6 miles from the head of navigation (at the foot of Rapids des Pins), on the second reach of the Lièvre river, 46 miles above Buckingham.

At its session of 1908, parliament granted \$4,000 towards wharfs at different points along the Lièvre river.

A floating landing, similar to the structure at High Falls (detailed elsewhere) was built here, between October 20 and November 11.

Expenditure at Notre Dame du Laus 1908-9, \$441.89.

NOTRE DAME DU PORTAGE.

On the south shore of the St. Lawrence, six miles west of Rivière du Loup, in the county of Temiscouata, is situated the village of Notre Dame du Portage, the place is much resorted to, by tourists, in summer. Spring tides rise 9 feet, neaps, 13 feet.

The construction of the wharf, commenced in the year 1904, was completed during the fiscal year ended March 31, 1909, by the addition of a block, 100 feet long, 30 feet wide, by a height of 23 feet; it is placed as an 'L' at the outer end of the wharf and running towards the east. The work is closed-faced, with upright posts every 20 feet, screw bolted to the face timbers, and is thoroughly ballasted.

A combined waiting room and rain-guard, 30 by 20 feet, was constructed on the head of the wharf.

The road, leading from the highway to the wharf, was built and fenced on both sides.

The wharf, as now completed, is 400 feet in length, 28 feet in width, with a head block, 30 by 100 feet, the height at the outer end being 23 feet.

The work commenced on September 1, 1908, was carried on during the months of September, October and November, and completed in March, 1909.

The expenditure during the last fiscal year amounted to \$5,398.18.

PASPEBIAC.

Paspebiac, a sea-port and a port of entry, is also the most important fishing station of the county of Bonaventure, it is for over a century the headquarters of the great fishing firm of C. Robin, Collas & Co.

9-10 EDWARD VII., A. 1910

During the last fiscal year 1908-9, the repairs begun the year before, were completed, and consist of the renewing of the flooring and in close-pile sheathing the north side of the wharf.

The work was carried on by day labour, was commenced on September 7 and was completed on November 9.

Amount expended in 1908-9, \$1,709.07.

PASPEBIAE EAST (PORTAGE).

Paspebiae East, also called Portage, Bonaventure county, is the most advantageous position for mooring fishing vessels, situated $\frac{3}{4}$ mile eastward of the bank of Paspebiae, it is the meeting place of all the fishermen of the coast.

During all the fishing season, a flotilla of vessels of all dimensions are stationed here; unfortunately the mooring place does not provide sufficient shelter, every year a large number of these boats are driven ashore and wrecked, and those repeated losses constitute a disaster for the fishing industry.

In the interest of the trade and of the inhabitants in general, at the last session of parliament, it was decided to construct a breakwater and the sum of \$3,000 was voted for that purpose.

During the last fiscal year, 1908-9, the sum of \$3,143.11 was expended to purchase the site and materials for the proposed breakwater.

PERCÉ.

Percé the county town of Gaspé, is situated on the Gulf of St. Lawrence, 36 miles from Gaspé Basin.

One of the slips having been damaged last fall, had to be repaired and the freight shed being damaged and partly buried by the gravel thrown up by a heavy storm, had to be raised 3 feet and repaired at a cost of \$218.36.

PETIT BONAVENTURE.

Petit Bonaventure, a post settlement in the municipality of St. Bonaventure, county of Bonaventure, is situated about 4 miles west of the village of St. Bonaventure.

During the fiscal year 1907-8, the entrance to the river, which was choked and closed up by a sand bar, was opened. A protection pier 83 feet long, 12 feet wide and 8 feet high was built on the east side of the river, at a cost of \$499.35.

During the fiscal year 1908-9, the improvement of the river was continued by the construction of a protection cribwork on the west side; it is 100 feet long, 18 feet wide, 7 feet high. The work was done by day labour, and was begun on October 20 and suspended on November 10.

Total expenditure during last fiscal year, \$1,540.88.

PETITE RIVIÈRE EST.

Petite Rivière Est is a post settlement in Gaspé county, 56 miles from Paspebiae, on the Atlantic, Quebec and Western Railway.

A freight shed, 20 feet by 30 feet, was built and completed at the landing of Petite Rivière.

Expenditure, \$75.50.

PICHE POINT.

Piche Point, Pontiac county, on the Quebec shore of Lake Temiskaming, opposite Haileybury, is the landing for Guignes, a prosperous farming district which sends supplies to the mining region on the Ontario side.

At its session of 1908, parliament appropriated \$11,500 for a pilework wharf at this place.

SESSIONAL PAPER No. 19

A contract was entered into for the construction of this work. Operations commenced April 20 and the wharf was completed October 16.

This structure of pilework extends out into Lake Temiskaming 342 feet, drawing $8\frac{1}{2}$ feet of water and standing 13 feet above low water level, fully protected by continuous ice-breaker. The landing faces are sheeted and provided with fenders, battering 8 on 1. There are two slips and a freight shed.

Expenditure, 1908-9, \$9,501.31.

POINTE A ELIE.

Pointe a Elie is the extreme southeasterly point of Allright island, 2 miles east of the House Harbour Catholic church.

The steamer *Amelia* calls at Pointe a Elie for mails and freight and for shelter during the northeasterly gales.

During the fiscal year 1902-3, a length of 115 feet by $22\frac{1}{2}$ feet in width of the pier proper was built; 850 feet of roadway, from 25 to 50 feet wide and of an average height of 9 feet, was also built of stone with a timber facing held in place by walings, posts and cross-ties.

During the fiscal year 1903-4, one hundred and ninety-five feet by $24\frac{1}{2}$ wide, was built.

During the fiscal year 1904-5, the last crib, 100 feet long by 26 feet wide, was built up to 18 inches to low water level and secured into position.

During the fiscal year 1906-7, the 100-foot crib was placed into position and completed, and a new crib of 100 feet was commenced ashore and the roadway widened in places by blasting and removing solid rock.

During the fiscal year 1907-8, the outside 200 feet were built up 18 inches to coping, the whole of the outside face, besides the outside crib, was sheathed with black birch, the outside face work of the shore end for a length of 54 feet was raised $3\frac{1}{2}$ feet and a wing of 42 feet long by 11 feet high was built on the east side to protect top of the bank.

During the last fiscal year, the crib, partly built last year, was launched, brought into position and completed; a new crib was started; the roadway was repaired opposite the landslide and extended 100 feet, and part of the materials needed for next year's operations, timber and stone ballast, placed in safety for winter.

Spring tides rise 4 feet; neaps, 2 feet.

Expenditure, \$6,529.53.

POINTE AUX ESQUIMAUX.

Pointe aux Esquimaux, in the united counties of Chicoutimi and Saguenay, is situated on the northern shore of the St. Lawrence, 525 miles below Quebec. Pointe aux Esquimaux is the *chef-lieu* of the north shore and most important trading post of that region for traffic in fur, fish and oil.

The wharf, purchased by the government in 1895, and extended in the following year, is now 213 feet long by a width of 30 and 40 feet, with an outer block 30 feet in length, 68 feet in width and 50 feet in height; and there is a depth of 40 feet of water at low spring tides.

During the fiscal year 1908-9, petty repairs were made to the wharf.

Amount expended in the fiscal year 1908-9, \$303.42.

POINTE-AUX-TREMBLES. (EX BAS.)

Point-aux-Trembles is situated in the county of Portneuf, on the north shore of the River St. Lawrence, some 20 miles above Quebec.

9-10 EDWARD VII., A. 1910

On February 8, 1908, a contract was entered into for the completion of the wharf, contract price, \$22,490.

This work consisted in a substructure of two contiguous cribs of close-faced crib-work that were placed close to the first part of the wharf; also a timber superstructure of a length of 141 feet measured on its middle axis.

This work was commenced and completed during the last summer season.

All the boulders in the vicinity of this wharf, which were dangerous to navigation were removed between October 28 and December 5, 1908.

The total expenditure amounted to \$16,103.09.

POINT FORTUNE.

Point Fortune, a post village in Vaudreuil county, on the River Ottawa, and on the Montreal and Ottawa short line of the Canadian Pacific Railway, 7 miles from Grenville and 45 miles northwest of Montreal.

In January, 1909, a pontoon, 16 feet square and 28 inches high, and intended to serve as a floating dock for the ferry, was built at Point Fortune.

Expenditure, \$279.01.

POINTE MACQUEREAU.

Pointe Macquereau, is the last fishing settlement situated at the eastern limits of the county of Bonaventure.

During the fiscal year 1908-9, the sum of \$200 was expended in the construction of a descent to the beach at that place.

The work was begun on the 12th and was completed on October 24. The descent is 200 feet long and 18 feet wide.

POLTIMORE.

Poltimore, Labelle county, is a small settlement near the west bank of the Lièvre, opposite La Salette, where great destruction took place on April 26, 1908.

The landing at this point being destroyed, another float was provided by the department for the dairy and other traffic to and from Poltimore. The structure consists chiefly of an old stone lifter float, 16 by 31 feet, built some seven years ago by the department, which drifted downstream after the landslide surge. It was restored and floored over. The cost of this work is included in the expenditure noted elsewhere for the La Salette landing, and covered by the appropriation of \$4,000 for floating landings on the Lièvre.

PORT DANIEL.

Port Daniel, Bonaventure county, is situated on the north shore of the Baie des Chaleurs, 45 miles from Percé. It is an important settlement of 1,200 inhabitants, mostly engaged in the fishing industry.

Spring tides rise 7 feet.

During the last fiscal year, the sum of \$2,498.70, was expended in making repairs to the portion of the wharf built in 1889. These repairs consist in the renewing of two courses of face timber, both sides of the wharf, and replacing the ties, stringers and flooring upon a distance of 350 feet by a full width of the wharf. These repairs were executed by day labour, on August 21, and suspended on December 17.

A sum of \$100 was also expended to repair a descent to the beach situated near by.

The work was commenced on the 2nd, and was completed on the 9th of October.

PORT DANIEL WEST.

Port Daniel West is one of the richest settlements of the Baie des Chaleurs, situated between Shigawake and the Baie of Port Daniel, county Bonaventure.

SESSIONAL PAPER No. 19

During the fiscal year 1908-9, the sum of \$300 was expended towards repairs and improvements to the three descents to the beach at that place.

The expenditure was made as follows:

McPherson's Beach.—The sum of \$50, to repair the cribwork placed at the foot of the descent.

The work was begun on September 25, and was completed on October 1.

Dow's Beach.—The sum of \$100, to remove large boulders which prevented boats to land; the descent was also repaired on its full length.

Work was commenced on September 17, and completed on October 14.

Dea's Beach.—The sum of \$150 was expended in the construction of a protection crib at the foot of the descent; it is 25 feet long and 18 feet wide.

The construction was begun on the 18th, and was completed on September 24.

PORT LEWIS.

Port Lewis, a post village and port on Lake St. Francis, in Huntingdon county, is 8 miles distant from Huntingdon, with stations on the G.T.R. and the N.Y.C., and 64 miles southwest of Montreal.

The upper structure of the old wharf, which was entirely dilapidated, was removed to low water level and rebuilt in solid cribwork for a height of 6 feet. The wharf has a length of 100 feet parallel with the channel, by a width of 34 feet for 58 feet of its length, and a width of 20 feet for the remaining 42 feet. The depth of water at the outer face is 8 feet. The approach, from shore to the wharf, is a solid embankment of stone, 75 feet long and 20 feet wide, with slopes of one in one at the sides. There has been erected at the angle of the upstream portion of the wharf and of approach, a store-house 20 by 24 feet.

During September, October and November, 1908, the two upper tiers of front face and sides and the walings of headblock were renewed; the corners strengthened; some stone ballast added, and the wooden flooring replaced by 6-inch concrete laid over the stone. Expenditure \$1,016.78.

QUEBEC HARBOUR.

At the end of the fiscal year 1907-8, the work under previous contracts with Messrs. E. Dussault & Co., comprising the construction of the eastern half of a wharf, 1,460 feet long, on the river front of the harbour, and 300 feet wide, were completed, with the exception of about 6,000 cubic yards of earth filling, which is not yet completed.

On August 8, 1908, a new contract was entered with the same contractors, for the construction of the western half of the wharf, with a bulkhead 400 feet long, running parallel with the Louise embankment, the total length of the new work being 1,526 feet, of the same class of work specified for previous contracts, for the bulk sum of \$746,792.99.

The work consists of timber cribwork, 46 feet 6 inches wide at the base; 21 feet wide at the top; filled with stone ballast, and built to a height of 3 feet above low water spring tides. The cribs are founded on a bed of rubble stone, 4 feet in thickness, deposited on the sand bottom previously dredged to a depth of 46 feet at low water spring tides, leaving an available depth of 42 feet at the outer face of the cribs.

From the level of 3 feet above low water, the superstructure, 21 feet high, is built of concrete, 16 feet wide at the base, 4 feet wide at top and stands 6 feet above high water spring tides, the back filling is procured from dredging done in the vicinity of the work where the depth of water is to be increased before the wharf can be used.

9-10 EDWARD VII., A. 1910

The timber employed in the construction of the cribs is spruce, 12 inches square, substantially built with vertical posts binding together the face timbers and the cross and longitudinal ties, the outer face of the cribs is sheathed horizontally from the bottom with elm timber 12 inches thick.

During the summer season of 1908, the foundation for the new work was excavated on a length of 570 feet, 70 feet wide; two cribs, forming a total length of 320 feet, were sunk in place and filled with ballast: the concrete superstructure was built on a length of 200 feet, and about 27,000 cubic yards of earth filling was done; two other cribs, each 165 feet long, were also built to a height of 15 feet. The work was started on May 11, 1908, and continued without interruption until November 30, when it was closed for winter.

The amount expended during the fiscal year 1908-9, on this work, was \$300,877.47.

QUEBEC CUSTOM HOUSE WHARF.

The flight of steps of the custom house wharf, in Quebec harbour was thoroughly repaired.

The work consisted in replacing 14 of the steps with their supports and the cross-ties; the length of these steps is 80 feet.

The work was executed from October 24 to December 5, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$1,624.21.

QUEBEC HARBOUR—CUSTOM HOUSE BASIN.

The custom house basin is situated in front of the custom house building, in the harbour of Quebec.

During the present fiscal year, this basin was dredged by the dredge *Ottawa* to a depth of 15 feet, at extreme low water, spring tides.

REPENTIGNY.

Repentigny, a post village in L'Assomption county, on the St. Lawrence, with port on that river at the quay de Repentigny. Its station, $1\frac{1}{2}$ miles distant, is St. Paul l'Ermite, on the Canadian Northern Quebec Railroad.

On August 10, 1904, a contract was entered into for the construction of a wharf opposite Juneau property about $\frac{1}{2}$ mile from the village, at the price of \$10,975. It called for the building:—

1. Of a close-faced crib headblock, 73 feet 6 inches long by 40 feet wide, standing 19 feet high in 7 feet 3 inches of water at lowest level.

2. Of a close-faced crib approach, adjoining headblock, of a length of 230 feet and a width of 16 feet.

3. Of a stone approach, 435 feet long and 18 feet wide at top, with slopes of one in one on both sides; the whole forming a length of 705 feet.

In order to place the proposed wharf as near as possible to the centre of the village, a change of site was decided and that opposite the Téléphone Thouin property chosen, thereby lengthening the stone approach from 435 feet to 748 feet, and the whole structure from 705 to 1,018 feet, but without modifying in any way its other dimensions. A further arrangement was made in December with the contractors, whereby they agreed to the change at an extra of \$5,039 above original contract price.

The work was begun in January, 1905, and finally completed in September, 1908. Expenditure during last fiscal year, \$1,584.44.

RICHELIEU RIVER.

A deputation from New York state, petitioned the government to improve the Richelieu river by deepening and otherwise. A cursory examination was made in January last.

SESSIONAL PAPER No. 19

RICHMOND.

Richmond is a progressive post town in Richmond county on the east bank of the St. Francis river, and a station on the Grand Trunk Railway. 77 miles south-east of Montreal. On the opposite side of the St. Francis river, is Melbourne village, which is practically a suburb of Richmond, and is connected with the latter by a fine bridge. Population about 2,200.

During the spring freshets, almost every year, the town of Richmond is flooded to a height of five or six feet, owing to ice jams formed in the river St. Francis, at a place called the 'Narrows.' In order to prevent this occurrence and the consequent floods, which has caused considerable damages in preceding years, it was decided to build four ice-breakers, three above the 'Narrows' and one above and opposite the pier of the municipal bridge. Work was commenced in February, 1903, and completed in December of the same year.

Later, it was decided to build four additional ice piers 150 feet above a dam in the St. Francis river, about 2,000 feet upstream of the bridge. The object of these ice piers was to retain the ice which runs over the dam during the winter and forms a large accumulation a few hundred feet below the said dam and contributes largely to the spring floods. The work was done in 1905.

During August and October, 1908, a sum of \$2,618.24 was expended in better securing the steel plates to ice-piers above the bridge.

RIMOUSKI.

The town of Rimouski, in the county of the same name, is situated on the south shore of the St. Lawrence, 180 miles below Quebec, its population is about 3,500. It is an important station of the Intercolonial railway. It is also the place where the Royal mails are transferred from the steamers to the railway. Its harbour offers safe shelter for vessels of moderate draught. Spring tides rise 15 feet; neaps, 9 feet.

The widening, repairing and other works of improvement, undertaken in May, 1904, were completed during the fiscal year ended March 31, 1909. Sundry works were performed which consisted in placing the capping pieces upon the new part of the wharf, to complete the bolting of the hardwood sheathing, repairing the old sheathing and top planking, &c.

A slip, 20 feet in length and 10 feet in width, was opened through the west face, near the outer end of the wharf, to facilitate the landing of the mails.

On the west face, from the slip going shoreward, 70 fenders, 20 feet long, 10 by 10 inches, were replaced.

A length of 220 feet, on the surface of the old part of the wharf, on a width of 19 feet, was levelled and raised 8 inches; the stringers and planking being renewed. Many minor works were also performed, such as replacing mooring posts, placing ladders, &c.

A building 35 by 25 feet, neatly finished and painted, was erected on shore near the end of the wharf; it is intended to store in this, all the tools and implements of the district. A blacksmith shop, 24 by 10 feet, was also built.

After the close of navigation, the railway track was levelled and raised 5 inches for a length of 850 feet, two stringers were placed under the rails and a new planking was laid on.

The flooring of the carriage track, was doubled on a surface of 6,000 square feet, with spruce deals 3 inches thick.

The work was done by day labour and was commenced on August 18 and completed on December 15.

The expenditure amounted to \$12,863.83.

Out of this amount, the sum of \$752.52 was paid for the supply of electric light upon the wharf during last season.

9-10 EDWARD VII., A. 1910

RIVIÈRE À LA PIPE.

Rivière à la Pipe is a small village on the north shore of Lake St. John, at the mouth of the river of the same name, 7 miles north of Grande Décharge.

During the fiscal year 1908-9, the work done consisted in rebuilding the wharf for a length of 244 feet by 25 width and 3 feet in height; a sheathing was put on for a length of 80 feet and the wharf was filled with stone.

The work was started in August and was discontinued at the end of November. Expenditure, \$3,014.80.

RIVIÈRE-AU-VASE.

Rivière-au-Vase, Chicoutimi county, on the north side of the Saguenay river, is situated in the parish of Ste. Anne de Chicoutimi, about 6 miles above Ste. Ann's village.

The work done during the fiscal year 1908-9, was the construction of a pier, 80 feet in length by 20 feet in width, which is completed.

The work was started on August 17, 1908, and was completed on November 20.

RIVIÈRE BLONDELL.

This is a small river, tributary of the river St. Lawrence, situated in the parish of St. Joachim, in the county of Montmorency.

This river is navigable for the small sailing vessels engaged in the lumber trade at this place.

During the last fiscal year, the strengthening of the second curve of the river was completed.

The work was commenced November 3 and was completed November 13, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$656.68.

RIVIÈRE DES VASES.

Rivière des Vases, in the county of Temiscouata, 125 miles below Quebec and 6 miles west of Isle Verte.

The sea-grass industry, which is the chief trade of the place, having grown considerably, and to provide better landing accommodation for the people living on the island opposite, in the year 1900, the construction of an open-faced cribwork pier was begun along the eastern bank of the river.

During the fiscal year ended March 31, 1909, an addition to this wharf, 75 feet in length and 8 feet high of similar work, was constructed; the total length of the wharf being now 250 feet, giving a flooring surface of about 7,500 square feet.

The work was done from September 1 to 28 of the same month.

RIVIÈRE DU LOUP.

Rivière du Loup, or the town of Fraserville, is the chef-lieu of the county of Temiscouata. It is situated on the south shore of the St. Lawrence, 115 miles below Quebec.

It is a thriving little town of 5,000 inhabitants, which contains several manufactories including two pulp mills. The Rivière du Loup point where the wharf is located, is distant 2 miles from the village. It is one of the best known and frequented summer resorts of the lower St. Lawrence.

There is a branch of the Intercolonial Railway from Rivière du Loup station to the outer end of the wharf, a distance of about 6 miles, and large shipments of lumber are made to the European markets.

During the fiscal year ended March 31, 1909, the following works were performed on the wharf: From the outer end going shoreward, the stringers, flooring and capping

SESSIONAL PAPER No. 19

pieces were renewed on a length of 100 feet by a width of 30 feet. At the shore end, where the railway track is laid, the structure was renewed from top to bottom on a length of 250 feet, a width of 24 feet on a mean height of 11 feet; all the timbers were replaced and the cribwork was filled with stone instead of earth as it was formerly.

Repairs were also done to the buildings standing on the wharf. The work, which was done by day labour, was commenced on August 20 and suspended on November 28. Spring tides rise 19 feet; neaps, 12 feet.

The expenditure for the fiscal year was \$4,663.32.

RIVIÈRE DU SUD.

Rivière du Sud, which flows through the town of Montmagny, empties into the St. Lawrence. Above the point where it is crossed by the Intercolonial Railway bridge, a protection or retaining wall was built some years ago along the east bank of the river.

The wall which is built of dry rubble masonry with cemented copings had been damaged by ice.

During the last fiscal year it was repaired; a length of 200 feet was rebuilt for more than half the height and the stone backing was replaced.

The work was done by day labour between October 15 and November 13.

Expenditure, \$428.79.

RIVIÈRE GIRARD.

In the year 1907-8, a small wharf was built on the east side of Rivière Girard, about $1\frac{1}{2}$ miles below Ile Verte church, the dimensions being 160 feet long, 12 feet wide on a mean height of 8 feet; the work is opened-faced, filled with stone.

During the fiscal year ended March 31, 1909, this wharf was extended a length of 60 feet, and the section built the year before, having been damaged by ice, was repaired.

The expenditure was \$999.64.

The work was commenced on August 24 and completed on October 7.

RIVER GODEFROYE.

River Godefroye is a small river in Nicolet county, rising in the seigniorie of Roquetaillade and flowing into the St. Lawrence through the parish of St. Grégoire, opposite Three Rivers.

On June 11, 1906, a contract was entered into for the construction of a landing pier at the entrance of Godefroye river, the contract price being \$4,200.

It called for the construction of :

(a) A pile headblock, 32 feet 3 inches wide, formed of two portions, one measuring 60 feet 6 inches on the outside face, another measuring 36 feet 6 inches also on the outside face, the two forming an angle of 125 degrees.

A stone approach, 611 feet long, 16 feet wide, clear at top, with slopes on both sides, said approach forming an angle of 25 degrees with the longer face of headblock; the whole structure standing 11 feet 3 inches above low water level.

Work was begun in July, 1906, and satisfactorily completed August 18 following.

In August, 1908, a sum of \$650.03 was expended in building a store-house 22 by 16 feet on a headblock and in raising stone approach from 1 to 2 feet for a length of some 200 feet. Some dredging brought the expenditure to \$8,689.28.

RIVIÈRE OUELLE.

The pier is situated at Pointe aux Orignaux, 5 miles distant from the village of Rivière Ouelle, in the county of Kamouraska, on the south shore of the St. Lawrence, opposite Murray Bay, on the north. A branch of the Intercolonial railway, built from Rivière Ouelle station to the outer end of the wharf, connects with a

6-10 EDWARD VII., A. 1910

steamer, which crosses the St. Lawrence several times a day during the summer season, calling at Murray Bay and other places on the north shore. In winter, the service is also daily.

Spring tides rise 20 feet; neaps, 12 feet.

During the fiscal year, it was decided to close the slip on the east side of the wharf. The dimensions are 200 feet long, 23 feet, greatest height, and 12 feet wide. The slip is filled with cribwork and stone ballast, to be joined on top with the old wharf.

The construction was commenced on the first of October and about three-quarters of the work had been performed when, at the end of November, it was suspended.

Expenditure, \$2,717.01.

RIVIÈRE PETIT CAPUCHIN.

Petit Capuchin, on the south shore of the St. Lawrence, about 30 miles below Matane, is a post village of the county of Rimouski, the occupation of the inhabitants consists chiefly in lumbering and fishing, some farming being also done.

During the fiscal year ended March 31, 1909, in order to allow the fishing boats to land safely, a considerable number of boulders were blasted and removed from the mouth of the River Petit Capuchin; the broken stone aggregating nearly 100 toises.

The work began on August 17 and was completed on September 11.

Expenditure, \$299.86.

RIVER RICHELIEU.

St. Johns is a delightfully situated town, chief-lieu of the district of Iberville, on the Richelieu river, 27 miles from Montreal.

St. Johns has a large trade in lumber, grain and country produce. It is connected with Iberville, on the opposite side of the Richelieu, by a fine bridge. Population, 6,410.

In order to give much needed assistance to boats passing through the swing span of the Vermont Central Railway bridge at St. Johns, a boom was constructed. It has a length of 350 feet, by a width of 4 feet, and is moored in clusters of 6 piles each, driven 15 feet into the ground every 50 feet, except the upstream cluster which has ten piles, and is protected against the ice by a steel plate, 6 feet by 6 feet and $\frac{1}{2}$ inch thick.

During the last fiscal year, minor repairs were made to the booms at a cost of \$356.59.

RIVER RICHELIEU IMPROVEMENTS.

The Richelieu river runs north from Lake Champlain, through the counties of St. John and Iberville, Chambly-Verchères, Rouville, St. Hyacinthe and Richelieu and flows into the St. Lawrence at Sorel. Along the upper part, of the river from the boundary to St. Johns, a distance of 22 miles, the shores are all low lands, excepting the first two miles. These low lands are covered at high water for sometimes over two months, long enough to prevent the culture of large areas. This high water also extends over the shores of the tributaries of the Richelieu such as Rivière du Sud and Rivière au Brochet. Some 40,000 acres of land are thus rendered entirely useless, the parishes mainly affected being: St. Athanase, Ste. Anne, St. George de Clareneville, St. Thomas, St. Johns, St. Valentin on the Richelieu; St. George de Henryville on Rivière du Sud, and St. Sébastien on Rivière au Brochet. The inundation is mainly attributable to the clearing of lands along the shores of Lake Champlain and of the Richelieu, and to natural obstructions in the latter.

In the spring, Lake Champlain rises some 7.2 feet above its summer lowest data, and the difference in level between the lake and St. Johns is only half a foot.

In order to lower the water and prevent the annual floods, it was decided to dredge a channel, 1,750 feet wide (the whole width of the river at its narrowest

SESSIONAL PAPER No. 19

place), and 5,200 feet long, starting between Jones' and the C. V. R. bridges. This lowering of the water of course rendering necessary the construction of a movable or regulating dam so as to keep the water up during the dry season.

The exact location and nature of this dam has not been decided as yet.

During the summer of 1908, tenders were called for above dredging, but price submitted per yard being found too high, it was decided to start the work by day labour; this was commenced in October. Advantage was taken of the extreme low water by blasting all the boulders which could not be easily handled by a dredge (one cubic yard and over).

When the work in the river proper was suspended, at the beginning of December, 4,171 cubic yards of large boulders had been reduced to pieces and the government dredge *Richelieu* and tug *Ottawa* had taken out, between the C. V. R. and Jones' bridges, some 6,570 cubic yards of clay, the major part of which was dumped on the Iberville side of the river.

The rest of fiscal year was occupied in making repairs to dredge and tug and in buying material for the construction of two scows to be used next year. Total expenditure during the fiscal year was \$29,119.60, including the building of a pile driver, composed of a steel hull, steam hammer and accessory machinery, for all of which tenders had been called.

RIVER ST. CHARLES.

The river St. Charles is a tributary of the St. Lawrence, east of the city of Quebec.

During the last fiscal year, this river was dredged, between the bridge of the Quebec and Lake St. John Railway and the Dorchester bridge, to a depth of 12 feet at the extreme low water spring tide.

This work was executed alternately by the dredges *Progress*, *Challenge* and *Ottawa*.

RIVER ST. JAMES.

River St. James flows into the St. Lawrence, about one mile north of the village of Laprairie, or five miles south of St. Lambert.

On December 24, 1907, a contract was entered into for the construction of two ice-piers near the mouth of river St. James, in order to protect, from ice shoves, the bridge which spans the river on the road between Laprairie and St. Lambert.

The piers, located 40 feet distant, are concrete mixed 1. 3. 5 and reinforced horizontally and vertically with one inch corrugated iron bars. They are of equal dimensions, 34 feet extreme length at bottom and 22 feet at top, 10½ feet wide at bottom and six feet at top, upstream and downstream faces nosed 90 degrees with the former covered by steel plates. Height, 23 feet. Contract price, \$7,023.

Work was begun in August, 1908, and completed in the middle of November following. The expenditure, including inspector's salary, was \$6,847.50.

RIVER ST. LOUIS (CANAL FEEDER)—NEAR VALLEYFIELD.

Valleyfield is an incorporated town, port of entry and port of call for the St. Lawrence river steamers in Beauharnois county, on the south of the St. Lawrence river at the head of the Beauharnois canal and at the foot of Lake St. Francis. Population, 10,000.

In 1894-96, the government built two small bridges over the, 4½ mile, canal feeder connecting Lake St. Francis, immediately west of Valleyfield, with river St. Louis, near village of Cartier. One of these bridges is in the parish of Ste. Cécile, about 2½ miles from Lake St. Francis, at the western extremity of road leading to 'Chemin Larocque.' The other bridge, connecting the road between St. Stanislas and St. Louis

9-10 EDWARD VII., A. 1910

de Gonzague, is near the eastern extremity of feeder, some 150 feet from River St. Louis.

In December, 1908, minor urgent repairs were made to the Ste. Cécile bridge: both abutments which had receded two feet, were raised to former level and the three inch spruce flooring of bridge renewed.

RIVER ST. LOUIS. (NEAR ST. LOUIS DE GONZAGUE.)

St. Louis de Gonzague, a post settlement in Beauharnois county, one mile from St. Louis station, on the Ottawa and Swanton branch of the Grand Trunk Railway. Population of parish, 1,200.

During the spring high water, the River St. Louis spreads over the farming lands from the canal feeder to the village of St. Louis de Gonzague, a distance of about seven miles, and thus causes considerable damage. During the summer, the river often overflows equally after a heavy rain storm, and extensive fields of promising crops have been entirely lost.

Surveys of the river were made in November, 1903, and October, 1904. It was found that from the river of St. Louis de Gonzague to a distance of $2\frac{1}{2}$ miles upstream, several little rapids give a total fall of six feet. Above the canal feeder, the fall is about one foot per mile.

By proper deepening of the river bed and straightening of certain curves, the waters should be lowered some four feet, which would be amply sufficient to protect the farmers along the banks.

To this end, a small dredge was built during the winter of 1903-04 and placed in operation in October, 1904.

Work was resumed in April 1908, and suspended November 21, until next spring. During this period, 5,433 cubic yards of solid rock were blasted and removed on a length of 450 feet and 18,250 cubic yards of clay dredged on a length of 1,825 feet.

The total expenditure during the last fiscal year amounted to \$9,050.72.

RIVIÈRE TROIS PISTOLES.

Trois Pistoles river empties into the St. Lawrence about 3 miles west of the village of Trois Pistoles, in the county of Temiscouata. There is a station of the Interecolonial Railway, called 'McKenzie.' A railway branch, about 6 miles long, extends from this station to a pulp mill on the river. A large saw-mill is also operating and important shipments of lumber are made to European markets.

To improve the channel, at the mouth of the river, the sum of \$999.43 was expended in removing obstructions from the entrance to the harbour; some 200 boulders were blasted, aggregating nearly 68 toises of broken stone, which were taken away. The channel was cleared upon a length of 1,800 feet by a width of 200 feet.

The work was done between August 22 and 31.

RIVIÈRE VAPEUR.

Rivière Vapeur, in the county of Rimouski, about 22 miles below Matane, where it empties into the St. Lawrence, forms a harbouring cove for fishing boats and vessels loading timber into ships anchored outside.

The landing in the cove was dangerous, on account of numerous boulders scattered in the entrance.

During the month of October, 1908, from the 5th to the 14th, a good many of these boulders were blasted and removed.

The expenditure was \$200.13.

SESSIONAL PAPER No. 19

RIVIÈRE VERTE.

Rivière Verte, which flows through the parish of Isle Verte, in the county of Temiscouata, empties into the St. Lawrence, about $\frac{3}{4}$ of a mile west of the Isle Verte church. During spring freshets, this river is liable to cause considerable damage by flooding the mills, scouring and disintegrating the land of the riparian properties.

In order to prevent further damage, or, at least, to reduce it to the lowest possible amount, it was decided to improve the channel of the river.

These necessary works were performed during the years 1904, 1905 and 1906.

During the fiscal year ended March 31, 1909, the dyke, built on the east side of the river, having been damaged by an ice shove and water undermining, was repaired; piles were driven along the east face of the dyke, on a length of 200 feet; the depth sunk into the clay, varying from 5 to 8 feet; the piles were well secured to the face timbers; the top of the dyke was raised and levelled by the addition of two courses of face-timbers and cross-ties. In front, bundles of fascines were spread upon the bottom of the river, and about 80 toises of stone have been placed on top. To facilitate the flow of water, the channel of the river was deepened in the vicinity of the dyke. The work was done by day labour, commencing on August 21, and terminating on the 24th.

To facilitate the landing of boats for people engaged in the sea-grass industry and to help that trade, which is growing every day, a small wharf was constructed along the western bank of Rivière Verte. It is 254 feet in length, 8 feet mean height, and has a width at flooring of 18 feet.

It is an open-faced light cribwork, filled with stone. To guard against undermining and scouring, the construction was seated upon a fascine foundation.

The work began on August 21, and was completed on October 24.

Total expenditure, \$2,189.34.

ROBERVAL.

The town of Roberval, in the county of Chicoutimi, is built on the east side of the River Ouitchouanish, near its mouth, on the south shore of Lake St. John, and 200 miles east of Quebec. It is the northern terminus of the Roberval branch of the Quebec and Lake St. John Railway.

In 1899, the wharf was destroyed by fire and was rebuilt, in 1900-01, for a length of 500 feet, a width of 30 feet and a height of 23 feet; a waiting room, 15 by 18 feet, and a freight shed, 15 by 28 feet, were erected on the wharf.

Amount expended, \$9,747.82.

During the year 1902-3, the wharf was enlarged on the south side for a length of 60 feet by 15 feet in height; a trestle work was built, of spruce timber, with four stringers of 12 by 12, ready to receive the sleepers.

Amount expended, \$4,581.59.

During the year 1903-4, the greater portion of the trestle work, done the previous year, was planked with 3-inch plank, stringers were laid, resting on a cap-piece of 12 by 12. The stringers are 10 by 10 inches and covered with 3-inch deals.

Amount expended was \$625.55.

During the year 1905-6, the planking of the trestle work, commenced in 1903-4, was completed.

Amount expended, \$1,002.81.

During the year 1906-7, the planking and the sheathing of the wharf was repaired.

Amount expended, \$16.88.

During the year 1907-8, the work done was the renewing of the planking of the wharf, and general repairs were done to the slip.

Amount expended during the year, \$1,000.91.

9-10 EDWARD VII., A. 1910

The work done during the fiscal year 1908-9, was the completion of the approach, and the renewing a part of the flooring. Amount expended, \$924.58. Work was started on September 22, and completed on October 13, 1908.

RUISSEAU À SEM.

In the county of Rimouski, about 18 miles below Matane, is Ruisseau à Sem, which forms at its meeting with the St. Lawrence a cove used as a harbour by fishermen and lumber merchants. Large saw-mills are in operation in the vicinity of Ruisseau à Sem. The entrance to the cove was crowded with boulders rendering navigation very dangerous. During the month of October, 1908, a number of these boulders were blasted, broken and taken away.

Total expenditure, \$200.

RUISSEAU LEBLANC.

Ruisseau LeBlanc is a small village on the north shore of the Baie des Chaleurs, in the county of Bonaventure. The village is built near the mouth of the river also called Ruisseau LeBlanc.

In order to protect the entrance to the river and afford shelter to fishing boats, on March 20, 1902, a contract was entered into for the construction of a breakwater, 500 feet long and 20 feet wide. The work was completed in the same year at a cost of \$21,077.29.

During the fiscal year 1904-5, the sum of \$300 was expended in repairs.

During the last fiscal year ending March 31, 1909, the stone approach which was partly washed out had been replaced by a good strong round timber construction, 125 feet long, 10 feet wide and 14 feet high, well ballasted with good sized stone.

The construction was carried out by day labour, at a cost of \$1,541.40, was commenced on September 14 and completed on October 10.

ST. ALEXIS DE GRANDE BAIE.

St. Alexis de Grande Baie is situated on the south shore of Ha Ha Bay, River Saguenay, about 63 miles from its mouth.

The wharf at this place is 1,565 feet in length by 25 feet in width; 580 feet are built in cribwork, the balance is of blocks and spans. There are 14 piers, 20 by 25 feet, one 25 by 25 feet, five 30 by 25 and the outer one, 50 by 25 feet. The piers are built of round log open-faced cribwork, with fenders, 8 by 10 inches and sheathed with 4-inch planks. The superstructure is built on corbels and stringers, 12 by 13 inches, with a planking of 3-inch spruce.

The total height of the outer pier is 31½ feet, with 9½ feet of water at low water spring tide.

During the fiscal year 1908-9, minor repairs were made to the wharf and a certain quantity of timber was bought in view of the construction of a new crib.

Amount expended during last fiscal year, \$2,633.58.

ST. ALPHONSE DE BAGOTVILLE.

St. Alphonse de Bagotville is situated at the head of Ha Ha Bay, on the southern side of the River Saguenay, 66 miles from its mouth. The work done during the fiscal year was the construction of a pier 60 feet wide at the west end, 44 feet 6 inches at the east end, and 160 feet in length, with a total height of 39 feet. This pier was sunk in January and was partly filled with stone. The work was done under contract.

Repairs were also made by day labour on one corner of the wharf.

Total expenditure during the fiscal year ending March 31, 1909, amounted to \$18,540.89.

SESSIONAL PAPER No. 19

STE. ANGÈLE DE LAVAL (DOUCET'S LANDING).

Ste. Angèle de Laval is a post village and parish in Nicolet county, on the St. Lawrence river, opposite Three Rivers and near to Doucet's Landing on the Three Rivers branch of the Grand Trunk Railway to Victoriaville and Arthabaska. Population of parish 982.

On February 8, 1907, a contract was entered into for the construction of :

A pile headblock, 85½ feet long and 6½ feet 3 inches wide, standing 23 feet 3 inches high in 12 feet of water at lowest level; a pile approach, 72½ feet long and 20 feet wide for the first 60 feet from stone approach, widening to 37 feet at intersection with headblock; a stone approach, 226½ feet long and 20 feet wide at top, with slopes of one in one on both sides. Contract price, \$4,911.75.

A right of way 30 feet wide and about 460 feet long, leading from public road to shore was bought for \$400.

The contract was completed December 30, 1908, with an expenditure for the last fiscal year of \$1,886.85.

STE. ANNE DE LA PÉRADE.

Ste. Anne de la Pérade is a post village in Champlain county, on the Canadian Pacific Railway, 6 miles from Batiscan and 53 miles above Quebec. The River Ste. Anne, one of the tributaries of the St. Lawrence, runs through the village.

During the winter of 1908-9 (from December 26, 1908, to January 26, 1909) the dykes, built in 1895 to protect the sand banks of the village, were repaired by day labour and 162 toises of stone ballast were placed at the most needed places.

The expenditure during the fiscal year has been \$1,693.46.

STE. ANNE DES MONTS.

The Ste. Anne river flows into the St. Lawrence at the west end of the village of Ste. Anne des Monts, one of the oldest and most important settlements of the Gaspé Peninsula, some 100 miles below the nearest railway station, Little Métis. Several saw mills are in operation.

In the fiscal year 1904-5, timber was bought, to the amount of \$570.86, towards improvements at the mouth of the river.

During the month of June, 1906, more materials were bought and work performed towards preparation for said improvements.

The outside crib, 50 by 22 feet at top, with a latter of one in eight was built up to coping into five feet of water at low tide.

During the fiscal year 1907-8, 400 feet of the training pier was built and a crib of 40 feet sunk into the channel and built up to two feet above low water level.

During the last fiscal year, the shore end of the jetty was connected with the outside part by mattresses and cribwork. Two hundred and fifty feet of superstructure will have to be completed next year and a gap of 50 feet, left without mattresses, filled. A new channel, 100 feet wide, was opened along the eastern side of work.

Total expenditure, including dredging, \$4,992.94.

STE. ANNE DE SOREL.

Ste. Anne de Sorel, in the county of Richelieu, is situated at the head of Lake St. Pier on the south shore of the St. Lawrence, 2 miles below the town of Sorel.

In 1890, the necessary materials costing \$2,497.11, for the construction of an ice-breaker 60 by 25 feet at bottom and 56 by 24 feet at top and standing 12 feet high in 7 feet of water, were bought. The structure was completed the year following at a cost of \$1,696.25. It is situated opposite the parish church.

9-10 EDWARD VII., A. 1910

At the beginning of October, 1898, the above pier was connected with shore by a crib 100 feet long, 18 feet wide at bottom and 14 feet wide at top with icebreaker all along, its height varying from seven to two feet.

Extensive repairs were begun in September, 1908, and completed at the end of October. The icebreaker of headblock was enlarged with stem six feet, so as to reduce the slope; the upstream side of wharf was covered with a one foot layer of concrete over icebreaker; the whole flooring was renewed in six inch concrete and the cap piece changed. Expenditure, \$1,256.14.

STE. ANNE DU SAGUENAY.

Ste. Anne du Saguenay, Chicoutimi county, is situated on the north shore of the Saguenay river, 72 miles above Tadoussac, opposite the town of Chicoutimi.

The work done during the fiscal year 1908-9, was the construction of a pier, 36 by 26 feet and 30 feet deep, which is a continuation of the present wharf; the west side of the whole wharf has been raised four feet, and a sheathing was put on the work.

Work was started on August 17 and completed on November 13.

Amount expended, \$3,999.75.

ST. CHARLES.

St. Charles is a post village in St. Hyacinthe county, on the River Richelieu, 9 miles from St. Hilaire station. Population of parish, 1,500.

In 1907, the government bought for \$300, the old crib wharf, 145 by 25 feet, extending upstream from Union street, opposite the saw mill and right of way, 75 by 23 feet, to Alma street included in purchase.

In September, 1907, work was begun on a new pile structure, built immediately in front of the old one, of the same length at top and 24 feet wide, lapping some four feet on the crib. It stands 18 feet high in eight feet of water at low level. The old wharf was brought, with stone and earth, to the level of the new structure.

The structure was finally completed at the end of November, 1908, and a freight shed, 15 by 20 feet was erected at south-eastern corner of headblock, at an expenditure of \$2,169.29.

ST. CHARLES BORROMÉE.

St. Charles Borromée is a village situated on the north shore of La Grande Décharge of Lake St. John, in the county of Chicoutimi, 21 miles above Chicoutimi town.

Two landing piers one on each side of the river, 100 feet in length by 40 feet width, were commenced in 1906, in round timber open-face cribwork and fully ballasted with stone.

The work done during the fiscal year 1908-9, was the continuation of the construction of the two landing piers; both are fully ballasted, and the north one is now completed.

Expenditure, \$1,034.56.

ST. CHARLES DE CAPLAN.

St. Charles de Caplan, situated on the north shore of the Baie-des-Chaleurs, is one of the most important business centres of the county of Bonaventure.

During the last fiscal year, 1908-9, the approach to wharf, which was in a dilapidated and dangerous condition, was repaired and a protection crib-work, 130 feet long, 12 feet high and 12 feet wide, was constructed and placed alongside the approach; it is a round timber construction well ballasted with stone.

The work was performed by day labour at the cost of \$787.79.

The construction was begun on October 14, and was completed on November 7.

At the last session of parliament, the sum of \$5,000 was voted towards the construction of an addition to the present wharf, which was built in 1904-5. The con-

SESSIONAL PAPER No. 19

struction of that wharf at St. Charles de Caplan was the beginning of its present state of prosperity.

During the fiscal year ending March 31, the sum of \$5,008.72 was expended to purchase timber.

STE. CROIX

Ste. Croix is a post village and parish in Lotbinière county, on the Interecolonial Railway, 29 miles southwest of Lévis.

At the last session of parliament, the sum of \$5,000 was voted for the construction of a wharf.

Work was started on October 1 and suspended on November 19; it consisted in building with stone, gravel and sand, an approach, 150 feet in length, 20 feet in width and extending from high water line inshore, and in constructing a crib, 100 feet in length, 20 feet in width on top, six feet high at south end and nine feet at north end, and fully ballasted.

Amount of expenditure, \$2,908.37.

The approach proper is an abutment 150 feet in length by 20 feet in width, extending from high water line inshore; it is built of large stone in foundation, levelled with layers of smaller sized broken stone, the whole covered and finished with earth, gravel and sand, well rammed, with, in addition, side crossings 15 feet wide, to allow circulation over the beach; depth of embankment at south end, 12 inches, increasing to 2, 3, 4, 5 and 6 feet, with three feet at north end or high water line where an open face crib of 100 feet in length, 20 feet in width on top, 6 feet high at south end and 9 feet at north end, starts; the structure is built of cedar with three-inch spruce deal sheathing on three faces, and fully ballasted. Cubic contents of embankment, 385 yards; of crib, 570 yards. The batter is one in ten feet; a small shed was also built for shelter, no other accommodation being any where near.

ST. EDOUARD DES MECHINS.

The village of St. Edouard des Mechins, in the county of Rimouski, is situated on the south shore of the St. Lawrence, about 25 miles below Matane. It has a population of 600, consisting chiefly of fishermen and lumbermen. Some farming is also done.

To provide more facilities of landing for the inhabitants of this part of the St. Lawrence coast, also to supply the total want of shelter for their craft, the department decided to build a wharf.

On October 30, 1906, a contract was entered into for the construction of the proposed work; the contract price being \$26,900. The construction was commenced in May, 1907, and the final estimate was forwarded on October 25, 1908. Nearly two-thirds of the work had been built during the last fiscal year. The new wharf consists of a stone approach, 20 feet long, and a crib-work, 585 feet in length, having a width of 20 feet for a distance of 260 feet and 30 feet for the remainder; the outer or north-west face being sheathed with red birch, 10 inches thick. The crib-work is close-faced with a batter of one in twelve on both sides and outer end.

The depth of water available at the outer end, at low water spring tides, is 17½ feet.

Spring tides rise 13 feet; neaps, 8 feet.

The road leading from the highway to the wharf, which was built last year, was fenced during the last fiscal year at a cost of \$25.

ST. ELOI.

St. Eloi, in the county of Temiscouata, lies on the south shore of the St. Lawrence, 17 miles below Rivière du Loup.

9-10 EDWARD VII., A. 1910

During the fiscal year ended March 31, 1909, to help trade by giving better facilities of landing to people engaged in the sea-grass industry, the construction of a small wharf was commenced on the south side of Rivière à la Loupe.

A length of 75 feet, 24 feet wide, by a height of 8 feet, was built. It is open-faced cribwork, filled with stone.

The work was commenced on September 17, and was suspended on October 29. Expenditure, \$1,009.84.

STE. EMILIE.

Ste. Emilie is a village in the county of Lotbinière, the post office name is Leclercville. It is situated on the south shore of the St. Lawrence and at the mouth of 'La Grand Rivière du Chêne,' 50 miles above Quebec.

The work done, by day labour, during the last fiscal year consisted in renewing a portion of the trestle-timbers, either lost or damaged in the heavy storm of November, 1907, and in rebuilding one of the sheds on the wharf.

The balance of the expenditure was incurred in clearing off the ice from the blocks, after spring freshets, and in replacing the trestle approach, which is usually removed at close of navigation.

Total expenditure during the fiscal year ended March 31, 1909, \$324.20.

STE-FAMILLE I.O.

Ste. Famille is situated on the north shore of the Island of Orleans, in the county of Montmorency, 18 miles below Quebec.

During the present fiscal year minor repairs were made to the flooring of the wharf from October 5 to 8, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$88.16.

ST. FRANÇOIS, I.O.

St. François is situated at the eastern end of the Island of Orleans, in the county of Montmorency, 25 miles below Quebec.

On February 11, 1908, a contract was entered into for the completion of the approach to isolated pier for the sum of \$16,038.

This work consists in (a) one solid close-faced, stone-filled timber crib of a total length of 200 feet and a width of 30 feet. This construction is built close to the completed part of the approach and well secured to the rock inshore.

(b) A stone embankment, 130 feet in length, by a width of 30 feet at the top, having both sides in riprapped stones and sloped one in one. The top of this stone embankment is formed of an 8-inch layer of macadam stones, covered with a 4-inch layer of gravel and sand. These layers are properly laid and hardened with a 2,000-pound roller. The sides of embankment are large hand-laid stones being at least 30 inches in length and 18 inches wide and deep, embedded alternately endwise and side-wise and perpendicular to the slope;

(c. The top of the rock forming part of the approach was levelled by blasting to the proper height.

During the present fiscal year the work detailed in this contract was completed.

ST. FRANÇOIS DU LAC.

St. François du Lac, chef-lieu of Yamaska county, is on the southern side of the River St. Francis, opposite the village of Pierreville, about 7 miles above the entrance of the river into the St. Lawrence, 28 miles southeast of Sorel.

Population of the parish, 2,639.

SESSIONAL PAPER No. 19

Work on the construction of a landing pier was commenced on August 31, 1908, and was discontinued on December 3 for the winter. The work was resumed on March 24 and at the end of the fiscal year the work was under progress.

The construction consists :

Of a pile wharf 140 feet long, 30 feet wide and nine feet in height above low water ;

Of an ice-breaker, built of close-faced cribwork, measuring 30 feet by 25 feet in width, 8 feet in height under water and 16 feet in height above low water mark :

On an earth and stone approach, with drainage, about 800 feet long and 39 feet wide.

The expenditure during the fiscal year ending March 31, 1909, was \$10,999.72.

ST. FULGENCE.

St. Fulgence, otherwise called 'L'Anse aux Foins,' is a village in Chicoutimi county, 10 miles below the town of Chicoutimi.

The work during the fiscal year 1908-9, consisted in the completion of the pier commenced in the previous year; this is 35 feet in length, 30 feet in width, with a height of 13 feet, sheathed and fully ballasted.

The work commenced on August 1, was completed October 31, 1908.

Amount expended during the year, \$1,666.97.

ST. GEDEON ISLANDS.

St. Gedeon islands, in the parish of St. Gedeon, are situated on the southeast shore of Lake St. John, 39 miles west of Roberval. Population about 1,200.

The work done during the fiscal year 1908-9 consisted in repairing both corners of the wharf and raising the slips. The work was started in September and was completed in October.

Expenditure, \$1,030.51.

In March, boulders were removed around the wharf at a cost of \$393.27.

ST. GODEFROY.

St. Godefroy, in the county of Bonaventure, is a flourishing parish, having a population of 2,500 inhabitants, partly engaged in the fishing industry. There is also a considerable lumber trade done at this place.

The wharf, built in 1904-5, which was badly damaged during the big storm of November, 1906, has been repaired during the last fiscal year. The construction, upon a distance of 400 feet, was raised and levelled up to its normal height; six hundred yards of ballast were put in; the sheathing on the east side partly renewed, and the cap pieces on the whole length of the wharf have also been renewed.

These repairs were executed by day labour at a cost of \$1,393.78; commenced on August 19 and completed on October 10.

ST. HILAIRE.

St. Hilaire, a post village in Rouville county, 1 mile from St. Hilaire Station, on the Grand Trunk railway, 22 miles east of Montreal. Population, 1,300.

On February 19, 1909, an order in council was passed authorizing the purchase of a shore wharf with adjoining plot of land, opposite the parish church, for the sum of \$1,200. This wharf built in about 1860, was open-faced crib-filled with stone, 62 feet long outside face, standing 14 feet high in 7 feet of water at lowest level. At the time of the transfer, the wharf was in a very dilapidated condition; the stone contained therein alone being considered of any value, together with the plot of land.

Its construction was begun immediately. The side face-timber were raised to low water level. In front of the wharf, a close-faced crib, 60 feet long and 8 feet

9-10 EDWARD VII., A. 1910

wide was sunk and fully ballasted with stone at each end, and return wings, 23 feet long and 8 feet wide were built from low water level over the old structure.

The top of the flooring of the new crib was made to stand 10 feet above low water level; the old wharf being brought to same level with stone. On March 31, the work was completed, minus the addition of some 30 cubic yards of stone, gravel and sand, and the construction of a freight shed. The expenditure during the last fiscal year was \$4,153.78.

ST. IGNACE DE LOYOLA SOUTH.

St. Ignace de Loyola is a post village and parish in Berthier county, on an island in St. Lawrence river, close to the western end of Lake St. Peter, and 2½ miles from Berthierville station on the Canadian Pacific railway and from Sorel, on the opposite bank of the St. Lawrence in Richelieu county. Population of parish 875.

St. Ignace de Loyola South is on the St. Lawrence immediately opposite Sorel, 1½ miles south of the parish church of St. Ignace, near which the government has another small wharf.

On November 18, 1907, the Crown entered into a contract for the construction of:

A pile headblock, 60 feet long and 40 feet 4 inches wide at top, with icebreaker inclined 1½ in 1; a pile approach 144 feet long and 20 feet wide at top, also with icebreaker 1½ in 1; a stone embankment, 84 feet long and 20 feet wide at top, with both sides riprapped and sloped 1½ in 1 and 1 in 1, upstream and downstream respectively; outside face standing 22 feet high in 10 feet of water at lowest level. Contract price, \$10,800.

Work was commenced in February, 1908, and at the end of March following, the structure was about 80 per cent completed.

The structure was completed at the beginning of October last. An extra of \$1,500 was allowed contractor for sheathing, down to one foot into the ground, the outside face of the headblock with 8-inch spruce, and the downstream side and inner return of headblock and downstream side of approach, with 4-inch spruce.

The expenditure during the last fiscal year amounted to \$5,094.91.

ST. JEAN, I.O.

St. Jean is situated on the south side of the Island of Orleans, in the county of Montmorency, 18 miles below Quebec.

During the last fiscal year, a new freight-shed and waiting-room was constructed on the wharf, surmounted by a lantern tower.

The work was commenced on November 2, and abandoned on December 31, 1908.

On March 5, this work was resumed and completed on March 18, 1909.

The movable slip was also furnished with two winches and necessary appliances for the working of the said slip.

The expenditure for the fiscal year 1908-9 amounts to \$2,394.34.

ST. JEAN DES CHAILLONS.

St. Jean des Chaillons, a post village and parish in Lotbinière county, is situated on the River St. Lawrence, 57 miles above Québec. Population of village, about 1,000.

During the last fiscal year, the following works were executed by day labour, at the government wharf:—

A length of 160 feet of open face cribwork, 20 to 35 feet wide, and averaging 6 feet high, was constructed as a continuation of the side wharf built in 1906.

The retaining wall, commenced in 1907, for the protection of the side wharf, was extended a further length of 99 feet.

In order to overcome a steep perpendicular elevation of the hill and to start the ascent towards the public highway, a crib of open-face cribwork was erected on

SESSIONAL PAPER No. 19

the east end of the side wharf; its dimensions are, at base, 29 by 33 feet, rising up to 29 feet above side wharf, with batter $2\frac{1}{2}$ in one on sides, making a 24 by 24-foot platform on top, and extending backwards on the cliff; a trestle approach, 76 feet long, 24 feet wide on platform and 44 feet wide at upper end, connects the crib with the road.

The whole seaward elevation of the side wharfs, the protection walls, the front and sides of the two end cribs are protected with a 3-inch sheathing of tamarack with white spruce and hemlock deals, to a depth of 12 feet.

Four movable upright fenders were placed on the outer end of wharf.

Work commenced on May 11 and lasted up to November 30.

Total expenditure for the last fiscal year, \$6,140.27, and dredging \$2,835.28.

ST. JÉRÔME.

St. Jérôme is a village situated on the southeast shore of Lake St. John, 24 miles east of Roberval; besides the church, post office, telegraph and railway station, the parish contains several stores, three cheese factories, and two saw-mills.

During the fiscal year 1908-9, the work done consisted in replacing two piers, that were removed from their original position, and in building two small piers. The pier which was sunk in March, 1907-8, was partly demolished by the flood, and a diver worked for two weeks to take the stone off that pier.

The old wharf was strengthened by adding vertical posts and a sheathing. The approach of the wharf was raised four feet, on a length of 140 feet from shore.

Work was commenced in August and completed in November.

Expenditure, \$4,004.26

ST. JOSEPH DE LETELLIER.

St. Joseph de Letellier, in the Bay of Seven Islands, north shore of River St. Lawrence, is situated in the county of Saguenay, 200 miles below Tadoussac.

The work during the fiscal year 1908-9, was the construction of a crib, 40 by 30 feet, with an average height of 14 feet; there is about 20 toise of stone in the crib; it was impossible to sink the crib last fall on account of the season being too late.

Work was started on September 8, and suspended on October 23.

ST. LAURENT, I.O.

St. Laurent is situated on the south side of the island of Orleans, in the county of Montmorency, 10 miles below Quebec.

During the last fiscal year, the widening of the approach to the head-block which was commenced during the fiscal year 1907-8, was completed.

This work consists in a solid close-faced stone filled timber crib, of a total length of 600 feet by an average width of 14 feet, having its sides vertical. The new work was well fastened to the old work.

The two-thirds of this construction were built during the fiscal year 1907-8 and the remainder was completed during the last fiscal year.

The work was commenced on August 17, and completed November 24, 1908.

The expenditure for the fiscal year 1908-9 amounts to \$7,109.83.

ST. MICHEL.

St. Michel, in the county of Bellechasse, lies on the south shore of the River St. Lawrence, 15 miles below Quebec.

The site of the village is picturesque and the place is frequented as a summer resort. The coasting steamer *Champion* calls twice a day, giving good facilities for the shipment of farm produce.

Spring tides rise 21 feet; neaps, 13 feet.

9-10 EDWARD VII., A. 1910

The public wharf at St. Michel is 1,100 feet long, 30 feet wide, with a headblock 50 by 40 feet.

During the fiscal year 1908-9, to provide better facilities of landing, a slip was constructed on the west side of the outer end of the wharf; the dimensions are 54 feet long, 11 feet wide, inclined 1 in 5 on the height of the wharf; it is close-faced cribwork filled with stone, two mooring posts and two elm fenders were placed on the slip.

The flooring of the wharf was renewed upon a surface of 1,872 square feet, with 3-inch thick spruce deals.

The west side of the freight shed, damaged by ice, was sheathed with 1½-inch boards, and the whole building and the mooring posts were painted.

The works were commenced on August 1 and completed on September 21.

The expenditure during the fiscal year was \$1,842.44.

ST. MICHEL D'YAMASKA.

St. Michel d'Yamaska is a post village in Yamaska county, on the Quebec, Montreal and Southern Railway, 10 miles from Sorel, about 3 miles above the lock on the Yamaska river. This river, one of the tributaries of the St. Lawrence, runs through the village. Population, 1,575.

It has been decided to build a public wharf at the centre of the village, on the western side of the river. A piece of land, from the public road to the river, was purchased from Dr. Bergeron, of St. Michel d'Yamaska, being part of lots Nos. 36, 41 and 42 of the cadastral plan of the parish, for the sum of \$500.

The landing pier consists of a close-faced cribwork, measuring 108 feet long, 30 feet wide and 12 feet in height, in four feet of water, with an ice-breaker at the upper end, measuring 34 feet by 30 feet by 4 feet.

The work commenced September 29, was discontinued December 3, 1908, for the winter. The work was resumed on March 26, and, at the end of the fiscal year it was under progress.

The expenditure during the fiscal year ending March 31, 1909, was \$5,432.60.

ST. NICHOLAS.

St. Nicholas is a prosperous village on the north shore of the St. Lawrence, 14 miles above Quebec, in the county of Lévis.

Spring tides rise 19 feet; neaps, 12 feet.

During the fiscal year ended March 31, 1909, the sum of \$123.39 was expended on the wharf at this place, in effecting temporary repairs to the flooring, on which were nailed down 290 spruce deals: work, which was done by day labour, was commenced on the 6th and completed on October 8.

ST. OMER.

St. Omer, a prosperous parish on the north shore of the Baie-des-Chaleurs, county of Bonaventure, some 42 miles from Metapedia.

A steamboat plies semi-weekly between St. Omer and Dalhousie.

On January 29, 1908, a contract was entered into for the construction of a wharf at that place. Contract price, \$12,400.

The construction, which consists of a cribwork abutment, 24 feet by 22 feet; 13 cribwork blocks, 20 by 22 feet, and an outer block, 30 by 26 feet, placed at intervals of 20 feet and spanned over with stringers; making a total length of 600 feet.

Construction was begun on May 1, and completed on August 29.

An additional sum of \$173.56 was expended to build an approach, to paint the mooring posts, tops of fenders and cap pieces; a crane and tackle were also placed at the outer end of the wharf.

SESSIONAL PAPER No. 19

ST. PAUL DE JOLIETTE OR D'INDUSTRIE.

St. Paul d'Industrie is a post village in Joliette county, on l'Assomption river, and a station called Crabtree's Mills on the Canadian Northern Quebec Railway, 5 miles from Joliette.

On January 10, 1908, the Crown entered into a contract for the construction of an ice-breaker in River l'Assomption, near the site of Malo bridge, some 4 miles south-east of the village of St. Paul. This ice-breaker is to be formed of :

A pile substructure, composed of 41 spruce or pine piles driven 18 to 20 feet at intervals of from 3 to 4 feet up to the level of the bottom of the river; a concrete superstructure 40 feet 10 inches long, 11 feet 7 inches wide at bottom, 18 feet long and 6 feet wide at top, with upstream face-nosed 90 degrees, covered with $\frac{1}{4}$ inch 3 by 25 feet steel plate, and inclined one in one from one foot above ordinary low water.

Construction work was begun March, 1908 and suspended the 25th of the same month when all the piles had been driven.

Work was resumed in August, 1908, and the pier completed in the middle of October. An extra of \$150 was allowed contractor for some additional rip-rap, 10 toise, which were ordered and placed around the concrete base. Total expenditure during year was \$4,240.70.

ST. PAUL DE L'ÎLE AUX NOIX.

St. Paul de l'Île aux Noix, formerly St. Valentin, is on the west shore of the Richelieu river, in St. Johns county, near the southern boundary, some 4 miles north of Lacolle or 12 miles south of St. Johns. Population about 600.

As this place had no wharf communication the large quantity of hay which is annually exported to the United States ports of Lake Champlain, and the farm produce shipped to St. Johns having to be conveyed in scows to barges anchored in the river channel, thereby causing double handling and correspondent expenses, a sum of \$5,500 was appropriated in 1897 towards the construction of a landing pier at the foot of the government road leading from the King's highway to the Île aux Noix ferry.

On March 17, 1897, a contract was entered into for the construction of :

A stone and earth embankment, 135 feet long, 25 feet wide, with sides and outer end sloped one in one; a trestle approach, 156 feet long and 20 feet wide; a crib-work headblock, 60 feet long and 35 feet wide, with outer face standing $19\frac{1}{2}$ feet high into $9\frac{1}{2}$ feet of water at low level.

The construction was started immediately and the structure completed in 1898 at a total cost of \$6,152.43.

In September, 1908, extensive repairs were begun, the four corners and part of outer face of headblock were resheathed with 8-inch oak and $\frac{1}{4}$ -inch steel plates, some floor planks renewed, the store-house painted and its supports strengthened, the derrick painted and some 500 feet of roadway, from King's highway to wharf, macadamized; work was completed at the end of November at a cost of \$1,168.53.

ST. PIERRE LES BECQUETS.

St. Pierre les Becquets is a post village and parish in Nicolet county, on the St. Lawrence, 4 miles from and opposite Batiscan, on the Canadian Pacific Railway, and 19 miles east of Three Rivers.

Work on the contract, entered into in May, 1908, for the construction of a landing pier at St. Pierre les Becquets, was begun in July and completed September 8 following. Contract price, \$7,456.75.

The structure, built at the foot of the hill leading to the river, consists of : a pile headblock, 84 feet long and 40 feet wide at top, with an ice-breaker inclined one and a half in one; a pile approach, 60 feet long and 20 feet wide, with ice-breaker all

9-10 EDWARD VII., A. 1910

along; a stone embankment, 85 feet long and 20 feet wide, with both sides riprapped and sloped one and a half in one.

An extra of \$1,400 was allowed the contractor for sheathing outside face of wharf with 8-inch spruce driven one foot into the ground, and the whole downstream side, and inner face of headblock and downstream side of pile approach with 4-inch spruce.

Contract called for the building of this wharf after the long 10 foot channel leading to it should have been dredged. As this dredging could not be completed this year, the wharf was built just the same, the whole outside piles being driven into some 25 to 27 feet of ground instead of 15 feet, as specified in contract. An extra allowance of \$244.60 was given contractor on this account, making total expenditure, \$22,008.10, including dredging.

ST. SIMÉON.

St. Siméon, is situated on the north shore of the river St. Lawrence, in the county of Charlevoix, 107 miles below Quebec.

On December 18, 1907, a contract was entered into for the construction of a headblock to the existing wharf, for the bulk sum of \$16,900.

This work consists in a solid close-faced and stone-filled timber crib of a total length of 100 feet and a width of 40 feet. This headblock is built close to the old wharf; the sides are built vertical. On the centre of the block, at the head, was left a space, 10 feet wide by 50 feet long, to place a movable slip. On each side of the slip were built two chambers for floating pontoons.

This work was commenced and completed during the last summer season.

Total amount expended, \$17,772.75.

ST. SULPICE.

St. Sulpice is a post village in l'Assomption county, on the north shore of the St. Lawrence, 24 miles below Montreal, 5 miles from l'Assomption on the line of the Canadian Northern Quebec Railway. Population of parish, 650.

During 1906-7, the private wharf, with adjoining plot of land, the property of the Richelieu and Ontario Navigation Company, situated at the foot of the road leading to l'Assomption, and $1\frac{1}{2}$ miles above the village of St. Sulpice, was bought by the Crown for the sum of \$2,300. The property was composed of: a crib headblock, $65\frac{1}{2}$ feet long at bottom, 56 feet at top on account of icebreaker, and 31 feet wide, outside face standing 19 feet high in 8 feet of water at low level; a crib approach, 150 feet long and 20 feet wide; a plot of land, adjoining wharf and extending to public road, of irregular shape and forming an area of 4,575 square feet.

In August, 1908, the old structure was razed down to 3 feet above low water level, a close-faced crib, 30 feet long outside face and 40 feet wide, was sunk along downstream side of the old headblock, an icebreaker was built the whole length of upstream side of wharf, and the approach widened on downstream side by the addition of a close-faced crib, 14 feet wide. The whole structure was brought to 12 feet above low water level and ballasted with stone; some more stone filling and the flooring remain to be done.

The total amount expended during the fiscal year 1908-9 was \$5,502.58.

ST. ZOTIQUE.

St. Zotique is a post village in Soulanges county, on the north shore of the St. Lawrence, $2\frac{1}{2}$ miles above Côteau Landing. Population, 950. The mooring pier at Côteau Landing having been found to be too near the head of the Côteau rapids, for the safety of rafts and steamers requiring to tie up, a mooring pier was begun at St. Zotique in 1881-2, and completed in 1884. It consisted of a close-faced crib headblock,

SESSIONAL PAPER No. 19

100 feet long, 24 feet wide, sunk in 9 feet of water, and of a 12-foot approach composed of 34 close-faced cribs measuring 8 by 12 feet, placed at intervals of 23 to 28 feet and spanned, 12 by 12 stringers supporting flooring, making total length of pier 1,150 feet.

In October, 1908, permanent repairs to approach were begun. The whole 34 timber cribs were razed to one foot above lowest level; another pier was added adjoining inner side of headblock and a concrete superstructure, from lowest water level to 4 feet above, built on the loose stone. These concrete blocks are all $10\frac{1}{2}$ by $4\frac{1}{2}$ feet at top, except for the two larger piers, where they are 22 by $4\frac{1}{2}$ feet with all sides battered one in twelve. Upon these were placed the steel spans composed of four 15-inch I-beams, 3 feet 3 inches distant, centre to centre (except the three spans between and immediately adjoining larger piers, where there are seven beams from 3 feet 3 inches to 3 feet 10 inches distant, centre to centre), resting on $\frac{1}{2}$ -inch bed plates and connected with $\frac{7}{8}$ -inch rods and 1-inch pipe separators. These steel beams support 5 by 7 inch cedar stringers and 3-inch pine flooring.

The work was suspended on March 31, 1909, when the expenditure for the fiscal year amounted to \$9,084.74.

SABREVOIS.

Sabrevois is a post village in Iberville county, on the Richelieu river, 7 miles south of Iberville. Population, 700.

In order to better accommodate the traffic by waterway to and from this place, an old wharf, together with a 30-foot right of way from the public road to the river, a distance of 1,372 feet, was purchased in 1899 for the sum of \$500. A new structure was immediately begun in February, 1900, by day labour, and completed in November following at a cost of \$6,573.70. The wharf consists of:

A stone embankment, 200 feet long and 20 feet wide, with slopes of one in one on both sides; a trestle approach, 120 feet long and 24 feet wide; a pile headblock, 108 feet long and 30 feet wide, with a cribwork icebreaker at upstream end.

During September, 1908, extensive repairs were begun; the whole 8-inch sheathing of icebreaker, some of the concrete, stringers and binders of headblock and trestle approach, and about half of the fenders and pine flooring were renewed; the store-house was also painted and the stone approach and right of way improved.

SAULT AU MOUTON.

Sault au Mouton is situated on the north shore of the St. Lawrence, 3 miles from Mille Vaches village.

Sault au Mouton river has a channel, which is navigable at high water, but is very dangerous on account of boulders.

The work done during the fiscal year 1908-9, was the removal of boulders, commenced in 1906-7.

Work started September 1, and was discontinued October 1.

Total expenditure, \$33.75.

SHIGAWAKE.

Shigawake, Bonaventure county, is a post village situated on the north shore of the Baie-des-Chaleurs, some 8 miles from Paspébiac. The village is built at the mouth of the river of the same name.

During the fiscal year 1908-9, in order to protect the road alongside the river leading to the beach, also to prevent the flooding of the mills, a channel was blasted out through the big boulder situated at the mouth of the river, some protection work was also done along the bank of the river.

The work was carried out by day labour, at a cost of \$181.30, it was commenced on October 12, and completed on November 14.

9-10 EDWARD VII., A. 1910

SOREL (DEEP WATER WHARF).

Sorel is an incorporated city, the chef lieu of Richelieu county, situated on the right bank of River Richelieu, at the mouth of Lake St. Peter, on the Quebec, Montreal and Southern railway and 52 miles northeast of Montreal, 33 miles from St. Hilaire.

On June 25, 1901, a contract was entered into between the Crown and Messrs. McAuliff, Poupore, Malone and Weddell, for the construction of a high level dock and for some dredging at the mouth of the River Richelieu, on the east bank, opposite the city of Sorel. The contract called for:

1. The construction along the Richelieu river of 600 feet of pile trestle work, backed with earth and stone filling to a width of 196 feet, measured on top from the side face of cribwork;

2. The construction of 700 feet of close-faced cribwork, continued for 100 feet in the direction of piling above mentioned, thence along the St. Lawrence, turning in an easterly direction at an angle of 123 degrees, the whole being stone-filled and backed with earth and stone filling to a width of 196 feet measured on top from outside face of cribwork;

3. The construction of 110 feet of pile work at eastern end of the earth and stone embankment;

4. The dredging necessary for the cribwork foundations, to a depth of 34 feet below extreme low water level, and some other dredging to 30 feet in order to permit easy access to wharf. Contract price, \$855,632.43.

Work was commenced in the autumn of 1901 and completed in April, 1905.

On August 7, 1907, a contract was entered into between the Crown and Mr. J. E. Beauchemin of Sorel, for the construction of cribs in front of the trestle wharf mentioned above. Contract price \$125,000. It called for:

1. The construction of six close-faced cribs, from 18 to 40 feet wide at bottom, from 15 to 18 wide at top, 41 feet high and a total length of 687 feet with necessary filling;

2. Dredging, to 30 feet below extreme low water level, a foundation for the above, including, a five foot deep, stone seat, from 40 to 62 feet wide;

3. Placing some 1,116 cubic yards of stone to form revetment at northeast end of old structure in the St. Lawrence.

Work was commenced in November, 1907; at the end of the fiscal year 1907-8, the revetment above mentioned had been made, a basin for boats of 8 feet draught dredged inside the 'L'-shaped high level wharf, and a claim of \$18,763 paid Messrs. McAuliff, Poupore, Malone & Weddell for extra dredging done in connection with their contract of 1901-5. Total expenditure during fiscal year was \$54,081.29.

On August 25, 1908, an extra of \$37,839.20 was awarded to contractor for some changes in original plan: the cribs, instead of resting on the 5-foot stone foundation specified, to rest on four rows of piles, driven from 25 to 35 feet into the ground, the first row immediately under the face timbers, the second and third rows 5 feet apart, and the last row from 8 to 10 feet from the third; piles of each row being 2 feet apart, centre to centre.

Up to March 31, 1909, all the pile foundation had been driven; the crib nearest to the St. Lawrence river, built 28 feet, sunk in place and fully ballasted, and the other 5 cribs, built to a height of 26 feet and floated. Expenditure during fiscal year was \$84,237.48.

SQUATECK.

Some 18 miles east of Lake Temiscouata, in the county of Temiscouata, is situated Squateck settlement, which, although quite new, will soon be the centre of a flourishing agricultural district.

The only means of transportation for the community is via Cabano and through Lake Temiscouata.

SESSIONAL PAPER No. 19

In the year 1907-8, in order to provide some accommodation and to give facilities of landing to the inhabitants of this isolated place, the construction of a landing pier was commenced, on the east side of the lake, opposite Cabano.

During the last fiscal year, the work was completed.

The wharf is now 150 feet in length, 24 feet width, for a length of 100 feet and 55 feet for the remaining part.

It is open-faced cribwork, sheathed with deals 3 inches thick. The wharf is provided with high and low level floorings and slips to facilitate the landing at the various heights of the water in the lake.

The work was carried on the months of September and October, 1908, and completed in March, 1909.

Expenditure for the fiscal year ended March 31, 1909, was \$2,352.82.

TADOUSAC.

Tadousac, or l'Anse à l'Eau, the chef-lieu of the county of Saguenay, is a watering place on the northeastern side of the Saguenay river, about 5 miles above its mouth, which is much frequented by tourists and health seekers during the summer season.

The work done during the fiscal year 1908-9 was as follows: flooring 250 feet long was put on the roadway; 600 feet of sidewalk, as well as the floor of the wharf, were also repaired; a sheathing was put around the wharf for a length of 80 feet: the roof of the freight shed was restored, and a railing was put on the promenade leading to the salmon reservoir.

The work started in August and was discontinued at the end of September.

Spring tides rise 17 feet; neaps, 10 feet.

Total amount expended, \$926.28.

TROIS PISTOLES.

Trois Pistoles, in the county of Témiscouata, is an important village on the Intercolonial Railway, 25 miles below Rivière du Loup. The land, in the vicinity, is fertile and the place is flourishing. It is somewhat frequented as a summer resort.

Along the River Trois Pistoles, stand large saw and pulp mills. The government wharf is located on the west side of the entrance to the harbour.

The repairs to the wharf, performed during the fiscal year ended March 31, 1909, were the following: A surface of 2,800 square feet of the face-timbers was sheathed with spruce deals 4 inches thick; 220 feet of capping pieces were replaced, and the hardwood sheathing was repaired. The work began on August 20 and was completed on September 30.

Spring tides rise 18 feet; neaps, 10 feet.

Between the wharf and the breakwater is a rock partly obstructing the harbour. Two years ago, the blasting of the rock was begun. The work was continued and completed during the fiscal year ended March 31, 1909. About 875 cubic yards of solid rock were blasted and removed. Some 600 cubic yards of boulders were also broken and taken away. The entrance to the harbour is now sufficiently wide. The work commenced on August 20 and was completed on October 31.

The expenditure amounted to \$2,500.01.

VARENNES.

Varennes, a parish and post village in Verchères county, on the St. Lawrence river, and a station on the Quebec, Montreal and Southern Railway. Population of parish, 2,342.

During March, 1908, the department entered into negotiations with the Richelieu and Ontario Navigation Company for the purpose of acquiring their wharf at Varennes, theirs being found the best location available. The sum of \$4,000 was

9-10 EDWARD VII., A. 1910

offered to the company for their property and accepted, but the transfer had not been completed on March 31 of that year. The old wharf proper has an outside face length of 60 feet, including icebreaker, and a depth of 60 feet. The adjoining plot of land extending to and along public road, and included with the purchase of wharf, is of irregular shape and forms an area of 17,365 square feet.

In September, 1908, work of reconstruction and enlargement of old structure was begun. A crib substructure, 30 feet outside face and 50 feet long, shoreward (latter making an angle of 116 degrees and 20 minutes with outside face) was built of close-faced timber and sunk along upstream side of old wharf. The timber of the latter was razed to one foot above low water level. All along downstream side, some 80 feet, and outer face another 90 feet, was built a concrete wall, 12 feet high, 5 feet and 1½ wide at bottom and top, respectively, with outer face sloped one in 12 and inner face with a one foot and a half retreat four feet from bottom and reinforced horizontally and vertically every five feet with one and a half-inch iron bars. The inclosure was filled in with stone and topped with a six-inch concrete flooring on a level of 12 feet above low water. The whole upstream side of wharf to public road, 171 feet, was protected by an ice-breaker, inclined one in one, with one foot concrete covering, starting two feet above low water and running up to six feet above flooring of headblock. All along said ice-breaker, was built, in six-inch concrete, a three-foot wide sidewalk, standing five feet above flooring of headblock.

The work, which was done by day labour, was completed November 30, with an expenditure, including purchase price of old wharf, of \$10,996.48.

VAUDREUIL.

Vaudreuil is a post village and parish in Vaudreuil county, on the Ottawa river, with port on the lake of Two Mountains, and on the Canadian Pacific Railway and Grand Trunk Railway, 24½ miles from Montreal.

In October, 1908, the reconstruction of municipal landing pier at the foot of Wharf street, vested in the Crown the preceding year, was begun. The headblock was raised to one foot below low water level, the approach razed to the ground, and the whole rebuilt up to seven feet above low water. The structure consists of:—

1. A crib headblock, 65 feet long, 23 feet wide, standing 11 feet high in four feet of water at lowest level.

2. A crib and span approach, 208 feet six inches long and 16 feet wide.

3. A crib and stone embankment some 57 feet long and 24½ feet wide. Total length of wharf, 288 feet 6 inches.

4. A freight shed 16 by 20 feet at northeastern corner of headblock.

Work was completed at the end of March, 1909, at an expenditure, for fiscal year, of \$4,542.97, exclusive of dredging.

WOODMAN'S BEACH.

Woodman's Beach, a meeting place for fishermen, situated on the north shore of the Baie-des-Chaleurs, Bonaventure county, some 4 miles east of New Richmond.

In order to provide accommodation to fishermen and to shelter their boats, a small breakwater, 70 feet long, 14 feet wide and 9 feet high, has been built at that place.

The work, carried on by day labour, at a cost of \$499.50 was begun on September 23, and completed on October 5.

SESSIONAL PAPER No. 19

PROVINCE OF ONTARIO.

ALLANDALE.

Allandale, Simcoe county, a ward of the town of Barrie, is situated on Kempenfeldt bay, an arm of Lake Simcoe, distant 66 miles northwest of Toronto on the Grand Trunk Railway.

On June 11, 1908, authority was given to expend the sum of \$150 in repairs to the approach to the wharf at this place by day labour.

The work consisted in renewing the approach, where it joins the cribwork head-block, and in gravelling the entire approach.

Total expenditure for fiscal year, 1908-9, \$127.30.

AMHERSTBURG.

The town of Amherstburg, county of Essex, in the township of Malden, is situated on the east bank of the Detroit river, about 5 miles from Lake Erie, and 15 miles south of Windsor, to which place it is connected by an electric car service. The Michigan Central Railway also runs into Amherstburg. Population about 2,500. It is one of the oldest settlements in Ontario, and a port of entry.

On November 8, 1907, authority was received to expend, by day labour, the sum of \$1,000, in the protection of Malden front, by the placing of stone rip-rap along same. On March 31, 1908, this work had not been completed.

At the last session of parliament, the sum of \$5,000 was appropriated for the protection of the east bank of the Detroit river, in the township of Malden, immediately south of Amherstburg, which had suffered severely from erosion, and, on August 29, 1908, authority was received to expend this grant, by day labour. Operations were commenced on September 11 and continued until December 5, 1908, when work closed down for the winter. Up to that date, some 930 lineal feet of the bank was protected by the erection of a dry wall, formed of boulders and reaching to a height of about one foot above water level. There still remains about 750 lineal feet of shore line that will require to be protected after the work in hand is completed.

On August 26, 1908, authority was received to expend, by day labour, the sum of \$150, for the removal of boulders which were found to form obstructions in harbour, opposite docks, and this amount was subsequently increased by an additional \$225. It was found impossible to secure the necessary plant for the performance of the work until November 6, 1908. Some 14 large boulders, averaging about 10 tons weight were removed.

Total expenditure during fiscal year 1908-9 was \$480.98.

ARNPRIOR.

Arnprior (population 4,500), county of South Renfrew, is located at the mouth of the Madawaska, on the south shore of Chats lake, which is an expansion of the Ottawa river, navigable for 20 miles.

At its session of 1908, parliament granted \$4,000 towards the construction of a public wharf at this place. An examination, survey and report was made with the view of restoring the old town dock, and later to extend the landing face to deeper water.

A by-law was passed October 5, transferring the old wharf to the Crown. Work of renewing the floor system commenced October 12 and was discontinued October 19.

Although the timber to renew the floor system was on hand, reconstruction could not proceed owing to the rotten condition of the supporting piers which had to be removed.

Total expenditure, \$874.63.

9-10 EDWARD VII., A. 1910

BAYFIELD.

Bayfield is a village, situated on the eastern shore of Lake Huron, in the county of Huron, at the mouth of Bayfield river, 12 miles south of the town of Goderich. Population about 600.

At the last session of parliament, the sum of \$1,800 was appropriated for repairs to piers, and, on August 10, 1908, authority was received to expend this grant by day labour.

Operations were commenced on September 1 and were continued until December 22, 1908, when work was completed. The work performed consisted of general repairs to north pier, including the renewal of portions of the face-timbers and decking as also the renewal of the filling of inner half of 120 feet of this pier; the construction of an extension to inner end of north pier, consisting of close-face cribwork, 80 feet in length, 5 feet 8 inches in height and 10 feet in breadth, filled with stone ballast, and constructed with a view to preventing spring freshets from cutting between the inner end of this pier and the high river bank adjoining. Close 3-inch sheet-piling was spiked on 45 feet of the inner end of south pier, and on the river side, while 150 running feet of the south face of this pier was sheeted with 3-inch plank, 10 feet long, in order to prevent stone-filling from falling out through the decayed face-timbers. About 90 feet of the approach to south pier was then repaired by the renewal of a greater portion of the face-timbers forming revetment wall for this approach, and the renewal and levelling of a portion of the filling in rear of this revetment wall.

During the fiscal year 1908-9 the total expenditure was \$1,800.

BAYSVILLE.

Baysville, district of Muskoka, is a small village of 200 inhabitants, situated on the south branch of the Muskoka river, distant 16 miles east of Bracebridge, the nearest railway station.

On August 18, 1908, authority was given to expend the sum of \$600 in enlarging the wharf by day labour on the east shore of the river.

Work was commenced February 1 and completed March 27; it consisted in making an extension, 50 feet by 10 feet, forming an 'L' to the present wharf.

Total expenditure for fiscal year, 1908-9, \$520.75.

BEAVERTON.

Beaverton, Ontario county, is situated on the east shore of Lake Simcoe, about 60 miles northeast of Toronto on the Grand Trunk Railway and Canadian Northern Railway. Population, 2,500.

At the last session of parliament, the sum of \$3,500 was appropriated for harbour improvements at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 1 and completed November 30.

It consisted in filling and grading at rear of sheet-piling on the north side of the harbour; filling with stone and brush at the rear of the breakwater on the northerly side, and grading the approach on the northerly side.

Total expenditure for fiscal year, \$1908-9, \$987.16.

BELLE RIVER.

Belle River is a prosperous village, situated on the south shore of Lake St. Clair, and on the London and Windsor division of the Grand Trunk Railway, 93 miles from London and 17 miles from Windsor. It is a French settlement of about 1,000 inhabitants.

SESSIONAL PAPER No. 19

At the last session of parliament the sum of \$1,000 was appropriated for dredging, close-piling, &c., and, on August 10, 1908, authority was received to expend the grant by day labour.

Work was started on September 7 and continued until November 30; it consisted of the construction of 106½ lineal feet of 4-inch close sheet-piling on inner end and on easterly side of harbour, and of a return of 10½ lineal feet of 2-inch piling, all securely tied back by 1-inch iron tie-rods to 11 anchor posts, driven in rear. Seven guard-piles, 18 feet long were driven at intervals along the face of the piling, while the waling along face of sheet-piling was supported by 11 oak piles, 16 feet long and well driven. The piling was reinforced by the driving of four oak anchor piles, 18 feet long, in rear, and to which sheet-piling was well tied back.

Some 550 yards of material were excavated by dredge at inner end of and on easterly side of harbour, the material being over-cast to provide filling in rear of new sheeting constructed.

The total expenditure during the fiscal year 1908-9 was \$990.32.

BEWDLEY.

Bewdley, Northumberland county, is situated at the west end of Rice Lake, and is a village of some 50 inhabitants to which a large portion of the surrounding country, rich in agriculture, is tributary.

At the last session of parliament the sum of \$1,000 was appropriated for the construction of a wharf at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 1 and suspended March 31.

It consisted in the construction of a pile wharf, 30 feet long by 20 feet wide, and a stone approach connecting it with the shore, 90 feet long by 12 feet wide on top.

Total expenditure for fiscal year, 1908-9, \$896.91.

BIRDSALL.

Birdsall, Northumberland county, is situated on the north shore of Rice lake, and is on the G.T.R., some 14 miles east of Peterborough. It is a small settlement lying in the centre of a well-settled and fertile agricultural district.

At the last session of parliament, the sum of \$3,850 was appropriated for the construction of a wharf at this place, and, on August 8 last, instructions were given to proceed with the work by day labour.

Work commenced September 1, and completed November 30.

Consisted in the construction of a solid block of cribwork, 100 feet long by 16 feet wide on top, 22 feet wide at the bottom and 10 feet high at outer end, having sloping sides and connected with the shore by a stone approach, 85 feet long by 16 feet wide on top.

Total expenditure for fiscal year 1908-9, \$3,849.10.

BLACK RIVER.

Black river, Ontario county, flows through the township of Rama and discharges into the Severn river on lots 23 and 24, concession M. in said township, and drains a considerable area of same.

At the last session of parliament, the sum of \$3,000 was appropriated for improvements on this river, and on August 8 last, authority was given to proceed with the work by day labour.

Work at both points was commenced November 26, completed March 4, and consisted in the removal of some 825 cubic yards of rock and 25 cubic yards of earth,

9-10 EDWARD VII., A. 1910

and the removal of 840 cubic yards of rock taken from some thirteen rocky obstructions, in order to give greater waterway for the relief of the spring freshets.

Total expenditure for fiscal year 1908-9, \$2,998.63.

BLANCHE RIVER.

Dredging.

The Blanche river, Nipissing district, empties into Lake Timiskaming, near the Quebec boundary. This stream, navigable for 26 miles to Tomstown, is used by settlers and lumber merchants, as an outlet. On account of landslides, the bed of the river is much obstructed by snags. In 1905, work of removing these was started.

Parliament, at its session of 1908, granted \$13,000 to continue the improvements on this river and on the south branch, above Charlton.

Work of improvement on Blanche river proper was resumed October 14. Owing to the extreme low stage of the river, boats could not go above Hilliardton, 8 miles below Towtown. The dredge commenced digging at this point, making a channel 260 feet long through a sand bar. It was then removed upstream 3 miles, where a channel was made through a gravel bar extending navigation to within 2 miles of Tomstown. A channel was then made through a clay shoal near the mouth of the river and the plant reached Haileybury early in November, where a channel was made, to reach the ways, partly through silt and quicksand. The plant was placed in winter quarters during the last week of November.

Total expenditure during last fiscal year, \$2,216.41.

BLANCHE RIVER.

(South Branch.)

The south branch of Blanche river flows southeasterly parallel to and about 11 miles northeast of the Montreal river. The foot of navigation is at Charlton, the terminus of a spur on the T. & N. O. Ry., and a transfer point for some of the traffic in the Elk Lake and Gowganda mining district.

At its last session, parliament granted \$13,000 to continue improvements on this water course and the main branch which forms part of the Lake Timiskaming navigation.

Work of improvement was resumed June 24, and discontinued October 20, 1908; it consisted in removing snags and deadwood jams and cutting the brush wood, uprooted and overhanging trees in the Narrows between lake expansions, as well as in the lower and upper reaches of this river. During the past season, 8 miles nearly, of the upper river was improved. Navigation now extends over 38 miles.

Total expenditure on the south branch of Blanche river during the last fiscal year, \$11,913.05.

BLIND RIVER.

Blind River is a village situated on the north channel, Lake Huron, in the district of Algoma, and is a station on the Canadian Pacific Railway. Extensive lumbering operations are carried on at this place. Population, 2,800.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a driveway around the government wharf, at this place, by day labour, and, on May 22 last, authority was given to proceed with the work.

Work was commenced June 1, and completed July 27.

It consisted in the construction of a timber driveway on piles, across the west end and along the north side of the warehouse; the portion across the west end is 52 feet long by 14 feet wide and that along the north side is 16 feet wide by 158 feet in length.

SESSIONAL PAPER No. 19

Dredging.

On May 23 last, authority was given to perform certain dredging at this place, and a contract was awarded to the C. S. Bonne Co., at the following prices per cubic yard, scow measurement, boulders \$3, all other materials 23 cents, bucket measurement, boulders \$3, all other materials 22 cents.

This work was commenced June 8, and completed September 12, and consisted in deepening and widening the channel and approaches to the new government wharf to a depth of 15 feet and a width of 118 feet to 215 feet, also deepening the turning basin at the government wharf to a depth of 15 feet.

Authority was also given on July 20 last, to perform two weeks' dredging in the approaches to and in front and alongside the wharfs of the White Pine Lumber Co., of this place, and the work was duly performed.

Total expenditure for fiscal year 1908-9, \$20,413.23.

BOWMANVILLE.

Dredging.

Bowmanville, or Port Darlington, Durham county, is situated on the north shore of Lake Ontario, 43 miles east of Toronto. Population, 3,500.

This harbour, built by the municipality, consists of two parallel piers at the mouth of a small creek. The west jetty is cribwork, 1,150 feet in length by 20 feet in width; the east jetty is 800 feet long, 30 feet in width, except at outer end, where it is 60 feet in width for a length of 240 feet.

On August 7, 1908, authority was given to perform certain dredging at this place, for which a contract was awarded on September 10, last, to Frank Simpson, of Toronto, at the following prices per cubic yard, scow measurement: Boulders, \$2; all other materials, 11¢; bucket measurement, boulders, \$1.50; all other materials, 11¢.

Work was commenced August 16 and completed September 9, and consisted in dredging between the piers and in the approaches thereto to a depth of 12 feet of water below zero of gauge at Toronto. Some 22,251 cubic yards of material were removed.

Total expenditure for fiscal year, 1908-9, \$2,758.77.

BRACEBRIDGE.

Dredging.

Bracebridge, District of Muskoka, is situated on the north branch of the Muskoka river, Victoria county, 125 miles north of Toronto. Population, 2,500.

On July 16, 1908, authority was given to perform certain dredging at this place, and a dredge was loaned for the work by the Public Works Department of the Ontario government, the federal government paying running expenses.

Work was commenced August 4 and completed December 2.

It consisted in dredging a channel 400 feet in length by 170 feet at the outer end and 150 feet at the easterly or inner end to a depth of 10 feet. The channel dredged leads to the government wharf.

In doing this work, some 10,700 cubic yards of sand were removed.

Total expenditure for fiscal year 1908-9, \$3,365.28.

BRONTE.

Bronte, Halton county, is a village on the north shore of Lake Ontario, 27 miles southwest of Toronto.

9-10 EDWARD VII., A. 1910

At the last session of parliament, the sum of \$1,000 was appropriated for repairs to the piers at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 1, and completed November 20, and consisted in the construction of a crib 16 feet deep by 16 feet wide and 50 feet long, also a crib 16 feet deep, 20 feet wide and 40 feet long, both of which were sunk in position at the northerly inside end of the east pier, and 18 inches of the superstructure was built over top of both cribs; the whole being filled with stone and decked with gravel.

Total expenditure for fiscal year 1908-9, \$1,000.

BRUCE MINES.

Bruce Mines, District of Algoma, is situated on the north shore of Lake Huron, 45 miles southeast of Sault Ste. Marie.

On August 8, 1908, authority was given to expend the sum of \$500 in the renewal of the covering and repairs to the pier at this place by day labour.

Work was commenced October 1 and completed November 20, and consisted in replanking portions of the wharf where required, also protecting the southeast and southwest corners by vertical sheathing, each fastened with two iron bands 4 inches wide by 12 feet long and $\frac{1}{2}$ inch thick, also new birch waling 180 feet by 8 inches by 10 inches. Two areas have been replanked, one 150 feet by 20 feet, and the other 45 feet by 20 feet.

Total expenditure for fiscal year 1908-9, \$392.26.

BURLEIGH FALLS.

Burleigh Falls, is on the route of the Trent Valley canal. At this place, there is a slide with training piers, &c., from which the department derives a revenue.

At its session in 1908, parliament granted \$825 towards required repairs and improvements. The training pier, damaged by ice, was repaired, and a training dyke, 100 feet long, 6 feet wide and 6 feet high, was built to cut off a series of rocky islands below the falls, where logs were impounded and damaged. This structure of open-face cribwork, sheeted, was rock-bolted at the heel and fully ballasted. The granite reef below the falls, which was another source of obstruction, was lowered from two to three feet by blasting out into deep water on one side.

Work was performed October 16 to 30, 1908.

BURLINGTON CHANNEL.

Burlington channel, Wentworth county, is simply a cut through a piece of low land which separates Lake Ontario from a large sheet of water called Burlington bay, thereby enabling vessels to reach the wharfs at the city of Hamilton. Over this cut a swing bridge has been erected. The cut is some 120 feet in width and, on the northerly side, has a cribwork pier, some 2,320 feet in length by 20 feet in width and, on the southerly side, a pier 2,650 feet in length by 20 feet in width, also of cribwork.

On August 3, 1906, authority was given to prepare contract plans and specifications for the construction of a pier head on the east or lake end of the south pier at this place for which a contract was awarded on June 20, 1907, to Mr. Jos. Battle, of Thorold, for the sum of \$9,490.20.

This work was commenced May 27 and completed August 27, and consisted in the construction of a pier head of cribwork substructure with concrete superstructure, having a parapet wall along the south and east sides. The east end of the pier head is V-shaped and is 40 feet by 38 feet over all.

On April 11, 1908, authority was given to expend the sum of \$200 in repairing the driveway from the highway to the south pier.

SESSIONAL PAPER No. 19

Work was commenced 25th and completed June 27. and consisted in the placing of large stone along the westerly edge of driveway and filling at the rear with small rubble and giving all a coat of gravel taken off the neighbouring lake shore.

On April 14, authority was given to expend the sum of \$400 in removing certain obstructions from the channel.

This work was commenced June 5 and completed October 30, and consisted in the removal of 20 piles, the drawing of 34 piles from the wrecked sheet piling, the removal of 186 lineal feet of oak waling and the replacing of 10 feet 6 inches of close sheet piling in the south pier.

On June 13, authority was given to place 1,000 cubic yards of large stone on the south pier to protect the remains of the damaged pier from further injury. Work was begun in September and completed in November.

On May 16, authority was given to expend the sum of \$1,400 for the removal of the wrecked portion of the superstructure of the south pier to prepare same for the placing thereon of large stone. Work was commenced June 1 and completed August 30.

On July 30, authority was given to expend the sum of \$12,600 in the renewing of the south pier at the easterly end immediately adjoining the new pier head.

This work commenced August 1, and completed November 30, consisted in the construction of a crib 40 feet square by 18 feet deep, also one 35 feet long by 40 feet wide at easterly end and 27 feet wide at westerly end with an average depth of 6 feet, both having concrete superstructure and parapet. This makes a headblock, 115 feet in length, completed.

On December 2, authority was given to expend the sum of \$1,200 in placing stone on the south pier.

This work commenced December 9 and was completed December 19; some 77 cubic yards of large stone and 257 cubic yards of smaller stone were used in the work and as talus. The remainder of stone purchased will be used in connection with the proposed repairs to the south pier.

On February 6, 1909, authority was given to expend the sum of \$60 in slight general repairs to the swing bridge, including the gates, sprocket wheel, &c., and the charge for same is included in maintenance of bridge.

The swing bridge staff were employed from April 1 to January 23, when the lights were put out and navigation closed for the season.

Total expenditure for fiscal year, 1908-9, \$48,314.03.

CALLNDAR.

Callendar, Parry Sound district, is a town of some 1,000 inhabitants, situated on the east shore of Lake Nipissing, on the North Bay branch of the Grand Trunk Railway, 9 miles south of North Bay. Lumbering and general business are the chief industries.

At the last session of parliament, the sum of \$1,000 was appropriated for the extension of the wharf at this place, and on August 20, last, authority was given to proceed with the work by day labour.

The work which was commenced on September 1 and completed October 12, consisted in extending the existing wharf out 44 feet, making the total length of crib-work with spaces 184 feet by 20 feet in width, connected with the shore by a stone approach, 82 feet in length by 16 feet width on top.

Total expenditure for fiscal year 1908-9, \$1,118.23.

CAPE CROKER.

Cape Croker, Bruce county, is an Indian settlement and reservation on the west shore of the Georgian Bay, 15 miles northeast of Wiarton.

9-10 EDWARD VII., A. 1910

At the last session of parliament, the sum of \$2,000 was appropriated for the addition of a headblock to the wharf on the south side of the portage across the Indian reserve; this sum was supplemented by an equal grant from the Department of Indian Affairs, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced on September 15, and is not yet completed, it consists in the construction of an extension to the present wharf, 80 feet in length by 20 feet in width, composed of close-faced cribwork.

Total expenditure for fiscal year 1908-9, \$1,417.33.

CHARLTON.

Charlton, a village in Nipissing district, is located on the south branch of Blanche river, 3 miles above Tomstown, and at the foot of a chain of lakes, on which navigation has been improved for a distance of some 38 miles. Charlton is connected with the T. & N. O. Ry. by a spur to Englehart. Charlton is a transfer point for some of the traffic into the Elk City and Gowganda mining districts. Population 200.

At its session of 1908, parliament appropriated \$5,000 for wharfs on Blanche river. The construction of a landing at this place being authorized, work started September 16, and continued to October 28, 1908.

The structure consists of a landing head, 48 feet square, drawing 7 feet and built 4 feet above L.W.L., on open crib-work piers; an approach, 16 feet wide, 48 feet long and framed bents and a warehouse, 16 by 32 feet, shingled.

CHATHAM.

The city of Chatham is situated on the River Thames, in the county of Kent, about 18 miles east from Lake St. Clair, and on the lines of three railroads, i.e. G.T.R., C.P.R. and Pere Marquette. It is 64½ miles west of the City of London and 47 miles east of the City of Windsor. It is a prosperous manufacturing place and has been steadily increasing in importance in the last ten years.

At the last session of parliament, the sum of \$33,000 was appropriated for work in the vicinity of Chatham, at the following points: St. Joseph's Hospital; Barrack Point; Tecumseh Park and McGregor's Creek.

ST. JOSEPH'S HOSPITAL.

On the 4th December, 1907, a contract, in the sum of \$3,562.50, was awarded for the construction of 375 feet of timber sheet-piling retaining wall, with a view to protecting the bank in rear of St. Joseph's hospital from further erosion. Work was commenced on August 17, and completed on September 21, 1908; it consisted of close sheet-piling of southern pine, 8 inches thick, 18 feet long with an average penetration of 10 feet, and reaching to a height of 9 feet 6 inches above L.W.L.

For the proper completion of the work it was found necessary to construct a length of 396 feet instead of 375 feet. In accordance with arrangements previously made, the necessary grading in rear of the piling was performed by the hospital authorities.

TECUMSEH PARK (BARRACK POINT.)

At the beginning of the year, the reinforcing of the concrete revetment wall, at Barrack Point, Tecumseh Park, was in execution. Owing to the high water level, which existed until the month of July, the work was only completed on August 19, 1908.

On December 4, 1907, a contract was awarded for the construction of an extension to the concrete retaining wall, Barrack Point, in the sum of \$2,205. Operations were commenced on June 18, and were completed about August 28, 1908.

SESSIONAL PAPER No. 19

The work performed consisted of the construction of a concrete retaining wall, 120 feet long, 3 feet 6 inches wide at base and 2 feet 6 inches wide at top, reaching to a height of 8 feet above L.W.L., and built upon a pile foundation. A landing slip with stairway reaching 10 feet 8 inches inward from the face of the work was also constructed. The necessary grading and filling in rear was performed by the city of Chatham in accordance with an agreement previously made with them.

On September 14, 1908, authority was received to construct an iron railing around the whole of this concrete wall for the safety of the public, and the work was completed on November 15.

CHUTE A BLONDEAU.

Chute a Blondeau is a post village on the Ottawa river, in Prescott county, 5 miles from Pointe Fortune and 7 miles from Hawkesbury on the G.T.R.

The work, in connection with the contract, entered into April 29, 1908, for the construction of a landing pier at Chute a Blondeau, was started in July and the structure completed September 18 following. The structure is situated immediately in front of the old McAllister's wharf, bought for the purpose, at a cost of \$800, including land, and consists of:—

A 10-foot crib wall, 100 feet long, outer face measure, with a return wing of 30 feet at down stream end, and an icebreaker, 40 feet long and 19 feet wide at other end, the lower 50 feet standing 16 feet high, and the other half 22 feet high, both into from $6\frac{1}{2}$ to 7 feet of water at lowest level. The intervening space between crib wall and the old wharf was filled in with stone. Contract price, \$6,500.

The total expenditure for 1908-9, was \$6,906.62.

COBOURG.

Cobourg is a large town on the north shore of Lake Ontario, on the main line of the Grand Trunk Railway, 88 miles east of Toronto. Population, 5,000.

At the last session of parliament, the sum of \$45,000 was appropriated for the extension of breakwaters and dredging at this place, and on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

The plans and specifications were prepared at Ottawa, and on August 18 a contract was awarded to the Randolph MacDonald Co., for the sum of \$139,000 to perform the work.

The actual construction has not yet been commenced, but the contractors have, on the ground, a large quantity of the material.

At the last session of parliament, also, the sum of \$2,315 was appropriated for repairs to the piers, and, on May 30, 1908, authority was given to proceed with the work by day labour.

Work was commenced June 11 and completed September 30; it consisted in rebuilding a small crib on the east side of the east pier and making general repairs to the existing structures. The crib is 12 feet wide by 48 feet in length.

Total expenditure for fiscal year 1908-9, is \$2,681.69.

COCKBURN ISLAND.

Cockburn Island, District of Algoma, is situated on the west shore of Manitoulin island.

On October 3, 1908, the sum of \$750 was authorized for repairs to wharf at this place, to be done by day labour.

Work was commenced October 28 and completed March 31, and consisted in lowering 260 feet of the wharf one foot, also redecking same with new stringers, and planking, where necessary.

Total expenditure for fiscal year, 1908-9, \$745.81.

9-10 EDWARD VII., A. 1910

COLBORNE.

Colborne, Northumberland county, is situated on the north shore of Lake Ontario, distant 14 miles east of Cobourg. Population, 1,000.

On November 8, 1907, a contract was awarded to Messrs. Kastner & Porter, of Wiarton, to construct a wharf at this place for the sum of \$12,990.

Work was commenced November 26, 1907, and completed August 31, 1908. It consisted in the construction of a stone approach, 350 feet in length by 16 feet wide on top, and of a wharf of cribs and spaces, 288 feet in length by 20 feet in width.

Total expenditure for fiscal year 1908-9, \$13,383.

COLCHESTER.

Colchester is a village, situated on the north shore of Lake Erie, in the county of Essex, about 4 miles south of Harrow, and about 14 miles from the Detroit river; it is also about 3 miles from Oxley, a favourite summer resort. Harrow is the nearest point with railway connection. Population about 200.

On June 6, 1908, authority was received to expend the sum of \$100 by day labour, in repairing slight erosion which had occurred to the stone approach. Work was commenced on the 22nd and completed on June 25.

Total expenditure during fiscal year 1908-9, \$94.22.

COLLINGWOOD.

Collingwood, Simcoe county, is situated on the south shore of Georgian bay, 94 miles by rail from Toronto. It is the terminus of the Northern and Hamilton and Northwestern Railway. There is an extensive trade in shipbuilding, grain and lumber, and it is the starting point for the steamers for Owen Sound, Sault Ste. Marie and Parry Sound. Population, 5,000.

On May 2, 1908, authority was given to perform certain dredging at this place, the work to be done by the C. S. Boone Co., of Toronto, at the following prices per cubic yard, scow measurement, and bucket measurement; boulders, \$2.18; all other materials, 75c.

Work was commenced April 28, and closed for the season November 14; it consisted in dredging to 12 feet of water east of the elevator, in cleaning and removing obstructions from the main channel, also performing some work at the wharf of the Collingwood Meat Co.

During the season, the dredge removed 6,870 cubic yards of rock and 30,020 cubic yards of other materials from area east of the elevator and main channel. While at the Meat Company's wharf, some 5,955 cubic yards of other materials were removed, and paid for at 35c. per cubic yard.

Total expenditure for fiscal year 1908-9, \$50,925.74.

COLPOY'S BAY.

Colpoy's Bay, a settlement in Bruce county, is situated on the west side of Colpoy's bay; an arm of Georgian bay, and is 3 miles north of Wiarton. Population 50.

At the last session of parliament, the sum of \$2,500 was appropriated for filling in gaps, in stem of existing wharf, with cribwork and repairing the superstructure and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 15 and completed December 5, consisted in filling in the openings in the present wharf with cribwork and reconstructing the entire superstructure of the old wharf. Four new cribs, 18 feet by 20 feet, and one 30 feet by 20 feet have been placed in the work.

Total expenditure for fiscal year 1908-9, \$2,414.69.

SESSIONAL PAPER No. 19

CROW'S LANDING.

Crow's Landing, Peterborough county, is situated on the south shore of Stoney lake, 22 miles northeast from Peterborough and is a small summer resort.

On July 3, 1908, authority was given to expend the sum of \$100 in repairs to the wharf at this place by day labour.

Work was commenced August 24, completed August 31, and consisted in repairing the approach with large stone to resist the action of high water and ice.

Total expenditure for fiscal year 1908-9, \$98.59.

CUMBERLAND.

Cumberland village, Russell county, is located 20 miles below Ottawa; 2 miles south of Buckingham Junction, on the Canadian Pacific Railway. Besides the regular ferry service, the public wharf, built in 1905, provides for considerable traffic from passenger and freight boats plying on the Ottawa river.

In May, 1908, the extreme flood stage of the river made it necessary to plank over the high-level approach at a cost of \$10. The warehouse was cleaned and painted, the handrailing was repaired and the low-level approaches were regraded August 27 to September 3 at a cost of \$67.98.

CURTIS LANDING.

Curtis Landing, Northumberland county, is situated on the south shore of Rice lake.

At the last session of parliament, the sum of \$1,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work, which lasted from October 1 to November 14, consisted in the construction of a wharf of cribwork, 30 feet long by 20 feet wide, connected with the shore by a stone approach, 15 feet wide on top and 75 feet in length.

Total expenditure for fiscal year 1908-9, \$987.36.

DAWSON POINT.

Dawson Point is a landing on Lake Timiskaming, opposite Haileybury, in the district of Nipissing. In 1901, a wharf was commenced at this point but not carried to completion.

At its last session, parliament granted \$950 for the purpose of completing this structure.

The work was performed from August 22, to September 10.

The structure consists of an open-face cribwork block, 30 by 20 feet, drawing 8 feet of water along the landing face and built 13 feet above the O.L.W.L., sheeted and fendered to a 12 on 1 batter, with slip and mooring posts, and a stone approach, 30 to 20 feet wide on top and 110 feet long.

During the fiscal year of 1908-9, the total expenditure amounted to \$951.86.

DYER BAY.

Dyer Bay, Bruce county, is situated on the east shore of the Bruce Peninsula, 16 miles from Lions Head. Population, 150.

On September 5, 1908, authority was given to expend by day labour the sum of \$700 in repairs to the superstructure of the wharf and approach.

Work was commenced November 10 and completed November 30.

Total expenditure for fiscal year, 1908-9, \$659.47.

9-10 EDWARD VII., A. 1910

FENELON FALLS.

Fenelon Falls, Victoria county, is on the route of the Trent Valley canal. At this point there are slide works which are a source of revenue to the department.

At its session of 1908, parliament granted \$500 for urgent repairs to the slide works.

The works were built nine years ago and during September last underwent repairs, which consisted in erecting a cofferdam, placing new gages, renewing part of the sheeting, hewing true the worn stop logs and bolting them in pairs, placing wrought iron straps on upper stop logs, and procuring three new stop logs of Douglas fir to complete the full height.

FORT WILLIAM.

Fort William, a city of 17,000 inhabitants, is situated at the west end of Lake Superior, at the mouth of the Kaministiquia river, in the district of Thunder Bay. It is the principal lake port on the north shore of Lake Superior and the terminus of two transcontinental railroads.

Through this port, the terminus of lake navigation, the bulk of the grain, grown in the Canadian west, passes on its way to the markets of the east.

At the last session of parliament, the sum of \$500,000 was appropriated for the harbours of Fort William and Port Arthur.

Dredging operations were resumed in this harbour for fiscal year 1908-9 on April 23 :

Dredge 'No. 5' started April 23.

Dredge 'Dominion' started May 1.

Dredge 'No. 8' started May 4.

Dredge 'No. 6' started May 7.

These dredges were continuously at work, except 'No. 6,' which was withdrawn from this work on September 1. Dredge 'No. 15' being substituted on September 9. Two dredges, namely 'No. 8' and 'No. 5' operated day and night from May 17 to October 31.

The sections dredged over are as follows :—

KAMINISTIGUIA RIVER.

Grand Trunk Pacific Dock to Canadian Northern Dock—

The channel in this section was widened to full width of river and deepened to grade, covering a length of 3,600 feet, by an average width of 300 feet.

Elevator 'D.'—

Shoal areas, in front of this elevator, were removed, covering a length of 1,100 feet by an average width of 100 feet.

Consolidated Elevator—

One dredge cut was made in front of this dock, extending from the west end of old Neebing dock to the west end of Consolidated Dock.

Opposite Ogilvie's Elevator—

Shoal areas on south side of river, covering a length of 700 feet, with a width of 100 feet, were removed.

MISSION RIVER.

The Mission river was deepened and widened from its junction with the Kaministiquia river to the shore line of Thunder Bay, being a length of two miles 600 feet and an average width of 240 feet.

SESSIONAL PAPER No. 19

Grand Trunk Pacific Basin—

Dredging was extensively carried on in excavating this area. Three dredges were employed during most of the season. The area excavated was 1,850 feet in length by an average width of 600 feet.

MCKELLAR RIVER.

A small channel was partly dredged from the Kaministiquia down this river towards lot 6, being 700 feet in length, with an average width of 100 feet.

A total of 2,883,607 cubic yards of material were removed from the areas mentioned above, from April 23 to December 4, when dredges were withdrawn for the season, made up as follows :—

South side of Kaministiquia.. . . .	37,259
McKellar river.. . . .	23,240
Consolidated elevator.. . . .	1,581
Grand Trunk Pacific bridge to Grand Trunk Pacific dock..	123,457
Mission river near Kaministiquia.. . . .	712,396
Mission south end.. . . .	1,881,749
Grand Trunk Pacific bridge to Canadian Northern Ry..	62,805
Elevator 'D'.. . . .	16,510
Canada Foundry.. . . .	3,641
Kaministiquia river off McKellar.. . . .	20,969

Total for 1908-9.. . . .	2,883,607
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Total expenditure during the last fiscal year, \$377,109.31.

GODERICH.

Goderich is the county town of the county of Huron, situated on the easterly shore of Lake Huron, at the mouth of the Maitland river, about 68 miles from Sarnia, and 63 miles from London. It is the terminus of the Buffalo and Goderich branch of the G.T.Ry., and of the Guelph and Goderich branch of the C.P.Ry. Population, about 6,000. It possesses many industries and is a progressive and thriving town. Located on the harbour front is one of the largest flour mills in Canada, capacity being 1,200 bbls. per day.

At the last session of parliament, the sum of \$107,300 was appropriated for harbour improvements at this point, as also an additional sum of \$4,205.93 to settle claim of Messrs. Smith & McGillicuddy, in connection with construction of breakwater pier.

On January 23, 1908, a contract for the sum of \$94,700 was awarded for the completion of 500 feet of breakwater at outer entrance to harbour. The substructure of this work, which is composed of close-face cribwork, filled with stone ballast, was completed in 1905; but it had since suffered considerable damage by storms. The work involved in the contract provided for a superstructure of mass concrete, reaching to a level of 8 feet above L.W.L., or zero of gauge in harbour. Construction work was started on May 8, and was proceeded with vigorously until September 12, when the work was completed.

On May 13, 1908, authority was received to accept the contractor's offer to supply and place, for the sum of \$2,000, a double ply of jute to be laid on surface of substructure and reaching to above water level before concrete superstructure was started.

On August 10, 1908, authority was given to expend, by day labour, the sum of \$3,300 for repairs to piers and erection of lights on breakwater. Repairs to piers were commenced on September 1, and were continued until December 24, when work closed down for the winter. It was again resumed on the 2nd, and completed on

9-10 EDWARD VII., A. 1910

March 31, 1909. It consisted in the renewal of the two upper tiers of timber, on the outer end of south pier, as also of the stringers, decking and a number of cross-ties of 122 lineal feet of this portion of the pier; several mooring posts were renewed and other minor repairs were made to different portions of the north pier.

The total expenditure for the fiscal year was, \$103,186.14.

GORE'S LANDING.

Gore's Landing, Northumberland county, is a small village of 100 inhabitants, situated on the south shore of Rice lake, 12 miles north of Cobourg, and lies in a fertile district.

At the last session of parliament, the sum of \$1,000 was appropriated for the completion of the wharf at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced April 14, and completed September 24; it consisted in placing stone filling in the wharf.

Total expenditure for fiscal year, 1908-9, \$287.36.

GRAND BEND.

Grand Bend is a village, situated on the easterly shore of Lake Huron, at the mouth of the Sauble river, about 13 miles from Parkhill, the latter place being the nearest railway station. It is a favourite summer resort, and, in this respect, is increasing rapidly in popularity.

On September 13, 1908, authority was received to expend the sum of \$600 by day labour, in performing urgent repairs required to piers. Operations were commenced on September 23 and continued until November 16, when work closed down for the winter. Work was again resumed on January 22 and completed on February 27, 1909. The work performed consisted of the levelling up of 475 lineal feet of the face-timber of both north and south side of breakwater pier; raising and levelling of a number of stringers and flooring, and other minor additions to strengthen the pier.

A ditch was excavated through sand bar which had blocked mouth of river, and in that manner the river was immediately recalled to its true course; a channel about 60 feet wide now flows through the bar.

Total expenditure during fiscal year 1908-9, \$637.93.

GRIFFITH'S ISLAND.

Griffith's Island, is the largest of three islands lying in the Georgian bay, at the entrance to Colpoy's bay, and Owen Sound. It has an area of about 3,000 acres, of which a considerable portion is arable. There is a sawmill on the island near the site of the wharf. The island is fairly well timbered, and a lighthouse stands on its northeasterly side. Population 100.

At the last session of parliament, the sum of \$2,400 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work was commenced October 1, and completed January 28. It consisted in the construction of a crib, 16 feet wide on top and 18 feet wide on the bottom, by 80 feet long, also two cribs placed alongside the large crib, one 12 feet by 24 feet by 10 feet deep, and the other 12 feet by 16 feet by 9 feet deep. This work connects with a crib 24 feet by 40 feet.

Total expenditure for fiscal year 1908-9, \$2,598.57.

SESSIONAL PAPER No. 19

HAILEYBURY.

Haileybury, Nipissing District, on the west shore of Lake Timiskaming, is the chief lake port on the route of the T. and N. O. Ry., 108 miles from North Bay, 5 miles from Cobalt, the heart of an important mining district.

The construction of a wharf was commenced in 1900-1, and proceeded with during irregular intervals until its completion, in 1907.

At its session in 1908, parliament granted \$4,000 towards the construction of further dockage at Haileybury. The amount became available too late and was not large enough to be used on any comprehensive scale of improvements. In April, urgent repairs were made to replace the torn waling and bent sheet piles of the Haileybury dock. In June, while the Lake Timiskaming plant was being overhauled, some \$50 worth of work was applied to regrade the wharf approach, which had scoured during the spring freshet.

Expenditure in 1908-9, \$660.84.

HAMILTON.

Dredging.

Hamilton, Wentworth county, is situated on the south shore of Burlington bay, at the westerly extremity of Lake Ontario. It has extensive manufactures, and is distant 39 miles from Toronto. Population, 65,000.

On May 23, 1908, authority was given to perform certain dredging at this place for which a contract was awarded to W. E. Phin, of Welland, at the following prices per cubic yard: scow measurement and bucket measurement, boulders, \$1.50; all other materials, 15c.

Work was commenced June 6 and closed for the season November 30, and consisted in widening and deepening, to a depth of 18 feet, the approaches to the wharfs of the Hamilton Steamboat Company, the Turbinia wharf and the R. & O. wharfs; also, in front of the new government revetment wall, some 1,230 feet in length to a depth of 12 feet at low water. The material from this latter work was overcast to fill the area at rear thereof, and the city of Hamilton provided for the levelling of this filling.

In doing this work, some 188,725 cubic yards of other materials were removed, of which 42,808 cubic yards were overcast. The material dredged from other portions of the harbour were also used for filling at the rear of the revetment wall, being dumped from the scows in front of the wall and overcast by a clam shell dredge at the expense of the city of Hamilton.

Total expenditure for fiscal year 1908-9, \$31,313.01.

HAWKESTONE.

Hawkestone, Simcoe county, is situated on the north shore of Lake Simcoe, 14 miles east of Barrie. Population, 600.

On November 11, 1907, authority was given to expend by day labour the sum of \$600 in repairs to the wharf at this place, and, on May 14, 1908, an additional sum of \$150 was authorized to complete the work.

Work was commenced April 1 and completed October 31; it consisted in replanking the whole of the deck and placing some twenty new stringers and a new waling, placing stone filling in the cribs and repairing the stone and gravel approach.

Total expenditure for fiscal year, 1908-9, \$768.72.

HEAD RIVER.

Head River, Victoria county, takes its rise in Mud lake and flows northerly through the township of Dalton and discharges into Black river, in the township of Rama, lot 8, concession 'H.'

9-10 EDWARD VII., A. 1910

At the last session of parliament, the sum of \$2,850 was appropriated for improvements on this river, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work consisted in the removal of obstructions from a tributary of the Head river, also the removal of rock and boulders from the Head river at Twin rapids, McDonald's rapids and the Natural dam, to enlarge the channel and increase the flow of the water.

The work on the tributary of the Head river consisted in the excavation of a drainage canal, 4,650 feet long, to pass through and drain about six lots, viz., 16, 17 and 18, concession 'D.' and lots 18, 19 and 20, concession 'E.' township of Rama. Dimensions of drain, as constructed, are: 8 feet wide on top and 3 feet deep at junction with Head river, from whence it gradually diminished in width and depth to a point 4,000 feet back from the river, where it is 5 feet wide at the top and 2 feet deep. Some 1,500 cubic yards of earth have been excavated by means of horse scrapers and shovels. This work begun October 23 and completed December 30.

The work on the Head river proper was commenced November 24, completed March 24, and consisted in the removal of 921 cubic yards of rock, of which 448 yards were removed from Twin rapids, 375 yards from McDonald's rapids and 98 yards from the Natural dam, also the removal of a number of boulders.

Total expenditure for the fiscal year, 1908-9, \$2,848.40.

HILTON.

Hilton, district of Algoma, is a small village situated on St. Joseph island, on the north channel of the Georgian Bay.

At the last session of parliament, the sum of \$2,000 was appropriated for repairs to wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 23 and completed October 31, and consisted in the removal of the superstructure of cribs to low water level, the building thereon of concrete walls and filling in the space between the walls to the height of the old wharf which the new work adjoins. The concrete wall is 30 inches thick by 360 feet long; being 200 feet along outer face, 30 feet wide at each end and 100 feet long inner face; a portion of the approach has also been planked for 71 feet by 12 feet, and 75 feet by 35 feet on the north side of the wharf.

Total expenditure for fiscal year, 1908-9, \$1,691.09.

HONORA.

Honora is a village on the east shore of Manitoulin island, district of Algoma, and is distant about 20 miles from Little Current. Population, 50.

At the last session of parliament the sum of \$2,800 was appropriated for an addition to the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 16 and completed December 31; it consisted in the construction of a driveway around the warehouse on the government wharf, 20 feet of which is 20 feet wide and 64 feet 9 inches is 16 feet wide, placed on four cribs. This portion is connected with the original wharf by a driveway 16 feet by 20 feet, which is splayed at corners joining the wharf.

Total expenditure for fiscal year, 1908-9, \$2,591.98.

JEANNETTE'S CREEK.

Jeannette's Creek wharf is located on the south bank of River Thames, opposite Jeannette's creek, in the county of Kent, about 4 miles from the mouth of the River

SESSIONAL PAPER No. 19

Thames. It was constructed in 1906, for the purpose of serving the surrounding prosperous farming district, and to enable them to ship their produce, by water, and to bring in coal, lumber and other materials.

On August 10, 1908, authority was received to expend the sum of \$200 by day labour, in levelling up the filling in rear of dock, as also for the providing of 30 feet sheet piling protection work at up-stream end of dock. Work was performed between January 2 and February 19, 1909.

Total expenditure during fiscal year, \$125.

JUNIPER ISLAND.

Juniper island, Peterborough county, is situated in Stoney lake; it is the centre for the distribution of supplies for tourists and cottagers using Stoney lake as a summer resort.

At the last session of parliament, the sum of \$1,500 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced August 28; but only a small amount of the materials were ordered when the work was transferred to the control of the Department of Railways and Canals.

Total expenditure for fiscal year 1908-9, \$29.20.

KEARNEY.

Kearney, district of Parry Sound, is a village on the Magnetawan river, 7 miles east of Scotia Junction, on the Grand Trunk Railway from Parry Sound to Ottawa. Population, 550. It is quite a lumbering and manufacturing centre.

At the last session of parliament, the sum of \$1,000 was appropriated for the extension of the wharf on Loon lake, and on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced on October 5 and completed November 25, and consisted in the repairing, from extreme low water up, 114 feet of the breast wall of which the wharf built last year is a continuation.

Total expenditure for fiscal year 1908-9, \$482.27.

KINCARDINE.

Kincardine is a prosperous town, situated on the east shore of Lake Huron, in the county of Bruce, 39 miles south of Southampton and 32 miles north of Goderich. It is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk Railway. Population about 3,000. It is the principal summer resort on the east shore of Lake Huron.

At the last session of parliament, \$4,200 was appropriated for repairs to piers and dredging, at this point, and on April 13, 1908, authority was received to expend, by day labour, \$800 in performing urgent repairs required to the north pier. On August 13 following, authority was received to expend, by day labour, the total grant of \$4,200 while later, on August 14, authority was received to expend an additional \$200, over and above the appropriation, for the purpose of completing the repairs to the north pier.

Repairs to piers were commenced on April 23, and were completed on October 10, 1908, and consisted in the removal of 23 feet of sheet piling towards outer end and on inner face of north pier, which had become loosened; the renewal of a considerable portion of decking and waling of this pier, as also the renewal of a portion of the decking and waling of the south pier.

Total expenditure between April 1, 1908, and March 31, 1909, \$4,390.33.

9-10 EDWARD VII., A. 1910

KINGSVILLE.

Kingsville is a thriving town, situated on the north shore of Lake Erie, in the county of Essex, about 25 miles east of the mouth of the Detroit river, and on the line of the Père Marquette Railroad. An electric railway line between Windsor and Leamington, also runs through this place. Population about 1,800. It is the centre of a very rich farming country, an important harbour of refuge, and is the principal point from which the steamers, carrying freight and passengers, run regularly to Pelee Island, Sandusky and Windsor.

At the last session of parliament, the sum of \$1,000 was appropriated for repairs and renewals required to easterly pier, and, on August 10, 1908, authority was received to expend the amount by day labour.

It was found that the work could not be judiciously performed until after the closing of navigation, and operations were, therefore, postponed until March 1, when they were commenced and were completed on March 31, 1909.

The work performed consisted of the double-decking, with 3-inch plank, along a length of 481 feet of the easterly pier, of a strip on each side of centre of driveway; another strip, 23 feet wide, for a length of 64 feet, together with a block 180 feet by 13 feet 8 inches were redecked with 3-inch planking; in addition, a few floor stringers were repaired, and other minor general repairs made to the pier.

Total expenditure during the fiscal year 1908-9, was \$991.48.

LAKEFIELD.

Lakefield, Peterborough county, is prettily situated on the Otonabee river, and on the Trent Valley canal, 10 miles north of Peterborough. It is a very popular summer resort and the terminus of the Grand Trunk Railway. A line of steamers sail therefrom to Stoney Lake, and, last year, 27,000 people passed through this place to the Kawartha lakes. The Lakefield Cement Company have their large works here. Population, 1,500.

At the last session of parliament, the sum of \$4,050 was appropriated for the construction of superstructure on the old wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Previous to the work being commenced, it was transferred to the control of the Department of Railways and Canals.

At the last session of parliament, the sum of \$5,000 was appropriated for the construction of a concrete wharf on the Otonabee river, below Block road, at this place, also the dredging of an approach to same, and on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

This work was also transferred to the control of the Department of Railways and Canals.

LAKE NIPISSING.

In the spring of 1908, the level of Lake Nipissing was abnormally high, and so remained through the summer, causing considerable damage to farm-lands on the northwest shore of the lake.

This exceptionally protracted high water was attributed to the construction of dams at the head of French river. An examination of the dams and of the flooded lands was made.

The dams were examined and found to reduce the section of discharge to a considerable extent, resulting in retarding the flow of the freshets.

From data obtained at the Georgian Bay Canal office, it was found that in the spring of 1908, the lake, with an elevation of two feet higher than at the same date in 1907, had 25 per cent less capacity of discharge.

SESSIONAL PAPER No. 19

It was recommended that the system of dams be altered and that the outlets be so widened as to allow the surplus water, during the freshets, to find an unobstructed passage.

The estimated cost of this work was placed at \$10,000.

The examination of the lands, for which damages were claimed, was made in the townships of Springer, Caldwell, Macpherson and Loudon.

It was found that there were 104.5 acres of improved land affected. The damages on these 104.5 acres was placed at \$868. As to the unimproved lands, which were flooded through most of the summer, there are about 1,600 acres. The value of this land is placed at \$6 per acre.

LEAMINGTON.

Leamington is a prosperous town, situated on the north shore of Lake Erie, in the county of Essex, about 37 miles from the city of Windsor, on the lines of the Père Marquette and Michigan Central Railways. Population about 1,800. It is the centre of a thriving farming district. A large number of oil wells are being worked in the vicinity of Leamington.

Between April 1 and 10, 1908, repairs, which were in progress during the previous fiscal year, were completed.

On August 20, 1908, authority was received to expend the sum of \$600 by day labour, in renewing a portion of the flooring and performing other minor repairs required to the pier.

Operations were commenced on September 15, and Completed on November 24, 1908.

At the last session of parliament, the sum of \$1,200 was appropriated for the construction of groynes to protect the banks to the east of the wharf from erosion, and, on August 10, 1908, authority was received to proceed with the work, by day labour. Operations were commenced on January 7, and were completed on March 12, 1909; and consisted in the construction of three groynes, each 40 feet long, 10 feet wide and 5 feet high, built of close-faced cribwork and filled with stone ballast.

Two coats of carbolineum avenarius were applied to the timber work.

Total expenditure during fiscal year 1908-9, \$1,919.81.

LIONS HEAD.

Lions Head, Bruce county, is a village of 600 inhabitants, situated on the west shore of the Georgian Bay, township of Eastnor, 22 miles north of Wiarton. There is a large saw-mill in active operation here and the output of lumber is considerable.

On December 6, 1907, a contract was awarded, in the sum of \$6,990 for the construction of an extension to the wharf at this place.

Work was commenced February 10, 1908, completed May 30, and consisted in the construction of a block of cribwork, 100 feet long by 25 feet wide, at the outer end of the existing wharf, as a continuation thereof.

On January 25, 1909, authority was given to enter into an agreement with the contractors to construct a further extension to the wharf of 65 feet by 25 feet of cribwork for the sum of \$4,800, which is a pro rata price of their former contract.

This work was commenced March 1 and is still in progress.

Total expenditure for fiscal year 1908-9, \$6,431.

MASSEY.

Massey, district of Algoma, is situated on the west bank of the Spanish river; it is an important town on the main line of the Canadian Pacific Railway from Sudbury to Sault Ste. Marie, and lies in a rich agricultural and mining district. Population, 1,800.

9-10 EDWARD VII., A. 1910

At the last session of parliament, the sum of \$2,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 1 and completed November 20; it consisted in the construction of a pile and cribwork wharf, 62 feet in length by 40 feet in width, connected with the shore by a stone approach, 42 feet long and 22 feet wide on top. The grade on the hill approaching the wharf was considerably reduced.

Total expenditure for fiscal year 1908-9, \$1,962.19.

MCGREGOR'S CREEK.

On December 4, 1907, a contract was awarded for the construction of about 153 feet of close sheet-piling retaining wall, on south side of McGregor's creek, in the sum of \$2,065.50, or at the rate of \$13.50 per running foot. Work was started on September 22, 1908, and later on it was found necessary to extend the work for a distance of approximately 300 feet. On January 22, 1909, the sheet-piling was completed, a total of 456 lineal feet of close-face timber sheet-piling having been driven.

The total expenditure for the fiscal year was \$9,942.11.

MEAFORD.

Meaford, Grey county, is an incorporated town situated on the west side of Georgian Bay, 21 miles west of Collingwood and 20 miles east of Owen Sound. It is the terminus of the northern division of the Grand Trunk Railway. Population, 2,500. There is a large grain elevator with a capacity of 750,000 bushels.

On January 21, 1908, a contract, in the sum of \$34,742.87 was awarded for harbour improvements.

Work was commenced May 4, completed September 30 and consisted in the construction of an extension to the breakwater easterly, 60 feet in length by 35 feet in width, of cribwork substructure with concrete superstructure; the removal of 60 feet of the 'L' on old westerly pier; the construction of 300 feet of tongued and grooved piling with iron main piles, 10 feet centres, forming a solid substructure for the concrete superstructure, firmly anchored to steel piles surrounded by concrete (anchor rods were also embedded in concrete), and the construction of 133 feet of tongued and grooved wooden piling.

Total expenditure for fiscal year 1908-9, \$34,829.87.

MONETVILLE.

Monetville, Nipissing district, is the centre of a prosperous farming region, on the west arm of Lake Nipissing. The village is located on Shanty lake, 4 miles beyond the head of Lake Nipissing navigation.

Parliament, at its sessions of 1908 and 1909, granted \$5,000 towards extending lake navigation to Monetville.

Work commenced October 19 and was discontinued March 10. The work consists in making a rock cut, 275 feet long, 20 feet wide between Lake Nipissing and Shanty lake, and deepening a second rock cut in Shanty lake 100 feet long and 20 feet wide, so as to provide for 6-foot navigation from Lake Nipissing. When discontinued, the status of the work was as follows: The main rock cut was completed to within 2 or 3 feet of grade; the cofferdams, at either end, were completed, and the timber for the cofferdams, in the second cut, had been bought.

Expenditure in 1908-9, \$4,617.66.

NEPIGON.

Dredging a channel through the bar, at the mouth of the Nepigon river, 1,690 feet in length and 200 feet in width, was commenced September 6 under contract with

SESSIONAL PAPER No. 19

the Great Lakes Dredging Company, and work was suspended for the season on December 5. During that period, 238,826 cubic yards were removed at the rate of 45 cents per cubic yard. Making total expenditure including inspection, &c., \$107,659.45.

NIGGER AND TELEGRAPH ISLANDS.

Telegraph island is situated in the Bay of Quinte about $13\frac{1}{2}$ miles east of Belleville. It is a small rock island on which a lighthouse is located. The channel is immediately to the north of the lighthouse, and is comparatively narrow with a rocky bottom.

Nigger island is also situated in the Bay of Quinte about $6\frac{1}{2}$ miles west of Belleville. A lighthouse is located about 1,000 feet southwest of the islands and the channel is immediately south of the lighthouse and is narrow and crooked with a rocky bottom. There is a shoal spot a short distance west from the island which mariners claim is an obstruction to navigation.

On May 23, 1908, authority was given to perform certain dredging at this place for which a contract was awarded to R. Weddell at the following prices per cubic yard, scow measurement, boulders \$3, all other materials 95 cents; bucket measurement, boulders, \$2.50; all other materials, 65 cents.

Drilling has been commenced over the area to be dredged at Telegraph island, but as yet, no dredging has been performed. Approximately, one-third of the proposed dredging has been drilled.

The proposed channel at Telegraph island is 1,100 feet long by 100 feet wide to be dredged to 15 feet below low water. At Nigger island, a rocky shoal, some 1,000 feet west of the lighthouse, containing, approximately, 1,100 cubic yards in situ, is to be removed, also a rocky point immediately south of the lighthouse some 700 feet long with an average width of 125 feet containing some 2,400 cubic yards, in situ. Up to the present, no work has been done at Nigger island.

Up to date there has been no expenditure.

NIPISSING VILLAGE.

Nipissing village, district of Nipissing, is situated on South river, some 12 miles from Powassan on the Grand Trunk Railway and 20 miles from Callendar, by water, and has a population of 250, which will increase as three saw mills have recently begun operations; the Nipissing Power Company are starting construction and will transmit 3,000 horse power to North Bay.

At the last session of parliament, the sum of \$1,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced September 10 and completed October 31, it consisted in the construction of a pile wharf, 70 feet on outer side and 66 feet on the shore side, with a width of 20 feet and an approach graded thereto.

Total expenditure for fiscal year 1908-9, \$877.51.

NORTH BAY.

North Bay, Nipissing district, is an important railroad centre, on the north shore of Lake Nipissing.

At its session of 1908, parliament granted \$400 for repairs and improvements to the public wharf, built in 1899.

The work was as follows: the headblock, for a distance of over 100 feet, was covered at the sides with 3-inch tamarack plank on inch sills; the original 4-inch flooring being repaired. The mooring posts, which had become rotted, were trimmed down and mooring hooks on wrought iron plates were attached to the ringed posts. Some

9-10 EDWARD VII., A. 1910

rip-rap was placed around the loose posts. The shore end of the approach was re-graded and protected with a rip-rap wall to prevent scouring at a vulnerable point.

Expenditure in 1908-9, \$268.24.

OAKVILLE.

Oakville, Halton county, is situated on the north shore of Lake Ontario, 29 miles west of Toronto. Population, 1,800. It contains several mills, factories and a ship-yard. The trade of the place is local. It is a station on the Hamilton branch of the Grand Trunk Railway.

On May 30, 1908, authority was given to expend by day labour the sum of \$510 in repairs to the north pier.

Work was commenced September 18 and completed October 28; it consisted in levelling up the northeast corner of the 'L' on the south end of the north pier, also replanking same where required.

Total expenditure for fiscal year 1908-9, \$510.

ORILLIA.

Orillia, Simcoe county, is situated on the west shore of Lake Couchiching, 89 miles northwest of Peterborough and 23 miles northeast of Barrie. Population, 6,000.

On June 23, 1908, authority was given to expend the sum of \$40 in painting shelter and waling on the government wharf at this place, by day labour; this having been done, the life chains were fastened to the waling with new bolts.

The stone approach to the wharf which had been damaged by severe storms was also repaired.

Total expenditure for fiscal year 1908-9, \$50.

OSHAWA.

Oshawa, Ontario county, is a town of some 5,000 inhabitants, situated on the north shore of Lake Ontario, on the main line of the G.T.R., 34 miles east of Toronto.

On May 30, 1908, authority was given to expend the sum of \$150 in repairs to the wharf at this place; on August 8, a further expenditure of \$600 was authorized in repairs to the pier and coal sheds to be done by day labour.

Work was commenced June 1 and completed November 30; it consisted in general repairs to the piers and the coal sheds such as replanking piers, where necessary, and repairing the tramway and reshingling the sheds.

Total expenditure for fiscal year 1908-9, \$745.44.

OTONABEE RIVER.

Otonabee river, Peterborough county, is an important waterway flowing through the town of Peterborough, emptying into Rice Lake, and connecting same with Stoney lake.

At the last session of parliament, the sum of \$5,000 was appropriated for wharf construction and repairs and, on August 8, 1908, authority was given to proceed with the work by day labour.

The work was commenced September 19 and suspended March 31; it consisted in the construction of a revetment wall or landing pier at the foot of Wolfe street, Peterborough, 288 feet in length in which there is a jog of 8 feet, 68 feet from the southerly end thereof, also return at right angles to above 38 feet in length, 30 feet of the surface of which is 18 inches lower than the surface of the revetment wall proper, and which is to be used as a small boat landing.

On November 20 last, authority was given to expend the sum of \$300 in repairs to the west end of old Rogers dam, across the Otonabee river, to fill in a breach caused

SESSIONAL PAPER No. 19

by a freshet and prevent material and debris from being carried into the dredged channel.

Work was commenced December 11, and completed January 12.

Total expenditure for fiscal year 1908-9, \$4,999.33.

PARRY SOUND.

Parry Sound, district of Parry Sound, is situated on the east shore of Georgian bay. Population, 3,000. The chief trade is in lumber. It is also a very popular summer resort, and is on the G.T.R., C.N.R. and C. P. Railways.

At the last session of parliament, the sum of \$5,000 was appropriated for the extension of the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 14 and completed January 30; it consisted in the construction of a pile extension to the existing structure, 150 feet by 30 feet.

Total expenditure for fiscal year 1908-9, \$4,114.57.

PELEE ISLAND.

Peelee island is situated on the western end of Lake Erie, about 35 miles south-east from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island is about 650. The products of the island are grapes, wine, fruit and farm produce. The soil is particularly rich and fertile.

During the fiscal year 1907-8, the north dock, with its approach, was purchased by the Crown from the Scudder estate.

At the last session of parliament, the sum of \$5,000 was appropriated for the completion of repairs and renewals required to this dock, and, on August 10, 1908, authority was received to proceed with the work by day labour.

Operations were commenced on November 2, completed on March 31, 1909, and consisted in renewing face-timbers, from low water level to height of 4 feet 2 inches above same, of 60 feet of approach to dock, decking of the four inner bays of dock, each bay being 22 feet long; 6 upper tiers of face-timbers of outer block were renewed and iron corner plates placed, together with the greater portion of stringers and flooring on this part of the dock; the floor sills on which warehouse rests were renewed, as also the lower three feet of the walls of the building; 16 new mooring posts were securely built in dock; stone filling renewed in various places, and other general repairs were made.

Total expenditure for last fiscal year, \$4,691.16.

PETEWAWA.

Petewawa, North Renfrew county, is on the south shore of the Ottawa, above Pembroke. In 1905, the department built a pilework wharf at this place, some 1,600 feet below the mouth of the Petewawa. Logging operations have been carried on for years past at this point. Owing to the formation of a sand bar, blocking the log channel immediately below the wharf, it became necessary to either move out the head of wharf or restore the channel. The latter plan was adopted and a channel, 65 feet wide, 215 feet long and 2 feet 4 inches deep, was made with drag scrapers and teams. Some 1,200 cubic yards of sand were removed, from August 10 to September 7, at a cost of \$300.

PIKE CREEK.

Pike Creek is a village, in the county of Essex, on the south shore of Lake St. Clair, and is situated on the London and Windsor division of the Grand Trunk Rail-

9-10 EDWARD VII., A. 1910

way. It is 10 miles east of the city of Windsor. Population, 250; principal industry is farming, although considerable fishing is done at the creek.

On November 31, 1908, authority was received to expend the sum of \$200, by day labour, in performing necessary repairs to sheet piling at entrance to the creek. Operations were commenced on December 1, and were continued as steadily as the weather and condition of the ice would permit, until February 27, when work was completed.

The work performed consisted of the withdrawal of 75 feet of the outer end of the sheet-piling on easterly side of entrance and the driving of same in a more easterly direction, in order to provide for the utilizing of the deeper water at entrance to creek.

Total expenditure during fiscal year 1908-9, \$197.20.

PORT ARTHUR.

Port Arthur is situated on the Kaministiquia river, about 1 mile from its discharge into Thunder bay, at the head of Lake Superior, 750 miles from Collingwood.

Dredging.

The contractor resumed dredging in the harbour on May 9, and completed his contract on July 4. During that period 38,186 cubic yards were removed, at a cost of 9½c. per cubic yard.

The total expenditure amounted to \$3,727.67.

Breakwater.

During the last fiscal year, Contractor M. J. Hogan commenced framing cribs for the new breakwater on April 14.

The first crib was sunk on July 4, and the first 1,000 feet of breakwater, which was constructed of timber, was completed on October 24. In addition, five cribs of the permanent work were sunk in place, and 13 other cribs are in different stages of completion.

Work closed down for the season on the December 3, 1908, and was again resumed on March 22 last to enable the contractor to build the headblock on the ice.

PORT BURWELL.

Port Burwell lies on the north shore of Lake Erie, about 90 miles above Port Colborne.

During the last fiscal year, dredging was done at the entrance of the harbour; all cuts were made 25 feet wide, and to an average depth not less than 20 feet. Other cuts were made in inner harbour to a depth of nineteen feet.

The total quantity of cubic yards removed was 41,844 and the expenditure amounted to \$17,370.13.

PORT COLBORNE.

During the fiscal year 1908-9, the work done at Port Colborne consisted in depositing along the lake side of the western breakwater, 6,000 cubic yards concrete blocks, 15, 10 and 5 tons in weight, which had been made during the preceeding year.

These blocks form an excellent protection for the breakwater, which is now in good condition. It is, however, only a question of a year or two, when the whole of the superstructure, which was unfortunately built of wood, must be replaced by one of concrete, at an estimated cost of \$250,000.

The work done in 1908-9 was satisfactorily performed by Mr. M. J. Hogan; the total expenditure being \$12,079.03.

SESSIONAL PAPER No. 19

PORT HOPE.

Port Hope, Durham county, is situated on the north shore of Lake Ontario, 60 miles east of Toronto, on the Grand Trunk Railway. The chief trade is in lumber and grain. It has a number of important industries. Population, 5,000.

At the last session of parliament, the sum of \$15,000 was appropriated for repairs to piers and dredging at this place, and, on August 14, 1908, instructions were given to prepare contract plans and specifications for same.

These have been duly prepared and forwarded to Ottawa.

The work consists in placing a concrete superstructure on the westerly breakwater, 310 feet in length by 20 feet in width, also repairing the easterly pier, 335 feet in length by 18 feet in width.

On November 19, 1907, a contract was awarded to W. E. Phin, of Welland, to perform certain dredging at the following prices per cubic yard, scow measurement, rock, \$2.40; all other materials, 22 cents.

The work was commenced October 15 and closed for the season November 30 and consisted in dredging in the harbour and approaches thereto to a depth of 12 feet below low water.

The dredge removed 52,274 cubic yards of other materials.

Total expenditure for fiscal years 1908-9:—

To paid, W. E. Phin, ...	\$11,500 28
" Inspection, ...	131 30
	\$11,631 58

PORT ROWAN.

Port Rowan, Norfolk county, is on the north shore of Lake Erie, in the inner bay of Long point, and is 21 miles from the town of Simcoe. Population about 1,000.

On August 10, 1908, authority was received to expend, by day labour, the sum of \$500 for renewals and repairs to wharf at this point. This grant was subsequently increased by \$200 in order to provide extra stringers.

Work was commenced on September 3 and completed on November 10, 1908, and consisted in the renewal of a large portion of the decking of the wharf, including new stringers across the open bays, and the renewal of a few face timbers.

Two coats of carbolinum avenarius were applied to all new timber.

Total expenditure during fiscal year 1908-9, \$420.49.

PORT STANLEY.

Port Stanley is an important harbour of refuge, situated on the north shore of Lake Erie, at the mouth of Kettle creek, in the county of Elgin, $8\frac{1}{2}$ miles by rail, south of the city of St. Thomas and $23\frac{1}{2}$ miles south of the city of London. It is the terminus of the Père Marquette Railway and of the South Western Traction Company Electric Railway. It is a favourite summer resort. Population about 750, which is largely increased during the summer months.

Port Stanley, a regular port-of-call for two lines of steamers carrying passengers and considerable package freight. There is a small grain elevator at this point, which, during past season, handled about 100,000 bushels.

At the last session of parliament, the sum of \$58,000 was voted for harbour improvements at this point, as also the sum of \$6,300 for the construction of groynes on the easterly side of the harbour.

On May 13, 1908, authority was received to expend the sum of \$100 in making minor urgent repairs required to piers: on June 18 following, authority was given to expend the sum of \$900 in extending the breast-work protecting approach to easterly

9-10 EDWARD VII., A. 1910

pier; on September 11, authority was received to expend the sum of \$4,800 in renewing a portion of the westerly pier in inner harbour, a further amount of \$900 to complete the work in hand was supplemented on March 1, 1909, all of the above works to be performed by day labour.

Operations were commenced on May 18, and practically continued during the fiscal year. The work performed consisted in the construction of an extension, 120 feet long, to the inner end of the breakwater, protecting approach to easterly pier, as also the completion of filling of the remaining 180 feet of breastwork; minor general repairs to both piers, and the stripping and renewal of 100 feet of inner portion of westerly pier.

Breakwater.—On July 20, 1905, a contract was awarded for the construction of two breakwaters, each 500 feet long, at the outer entrance of this harbour, in the sum of \$105,828. It was subsequently decided to change the site first proposed for the breakwaters and to construct one breakwater, 1,000 feet long, protecting the westerly side of entrance to harbour, and the inner end of the structure to connect with the existing Père Marquette pier. This change was made in order to give complete protection from the prevailing storm winds, which are from the southwest, as also to assist in preventing the filling up of channel, at entrance to piers, by the littoral drift from the southwest. Operations were commenced on August 7, 1906, and by March 31, 1908, 400 feet of substructure, composed of close-face cribwork with stone ballast had been built and placed in position, while the remaining 600 feet of cribwork was constructed and moored in harbour. Operations were resumed on April 18, 1908 and continued until December 7, 1908, when work closed down for the winter.

The breakwater, as built to date, consists of close-face cribwork substructure, 35 feet wide, filled with stone ballast and reaching to a level of approximately one foot below low water level, and with an average height of 23 feet. A berth was provided for these cribs, the dredging of which was performed by this department. The superstructure consists of mass concrete, additional cost over and above the amount of contract being \$33,044.

On November 7, 1907, authority was received to accept the offer of contractors to supply and drive two clusters of guard-piles on southerly face of inner face of breakwater for the sum of \$1,350.

On October 28, 1908, authority was received to have 1,000 cubic yards stone talus placed around breakwater by the contractors at a price of \$3 per cubic yard, and on November 21, following, further authority was received to place an additional 400 cubic yards of this talus at the same price. On November 28, 1908, authority was also received to accept the offer of the contractors for the construction of necessary connection between the inner end of breakwater and the outer end of Père Marquette pier; work to consist of concrete side walls, having an average width of 5 feet, with stone filling between; the average length of this connection is 15 feet. Amount of contract was \$2,100.

At the end of the past fiscal year, the construction of the entire breakwater, together with the additions mentioned, were completed with the exception of the placing of a few iron plates.

Groynes.—On February 1, 1909, a contract was let in the sum of \$6,535, for the construction of six groynes to protect properties to the east of the harbour of Port Stanley from further erosion. The groynes will be 60 feet long, 10 feet wide and 6 feet high, reaching to 2 feet 3 inches above low water level. They will be filled with stone ballast and will be protected from erosion at the outer end by the driving of close-face sheet-piling. The work commenced on February 19, 1909, and, at the end of the fiscal year, was still in progress. Up to that date, six cribs were completed with the exception of the two top tiers of timber.

The total expenditure from April 1, 1908, to March 31, 1909, \$703.43.

SESSIONAL PAPER No. 19

PROVIDENCE BAY.

Providence Bay, district of Algoma, is situated on the south shore of the Manitoulin island, Lake Huron, about 12 miles northwest of Michael's bay and 30 miles by road from Manitowaning and 25 miles from Gore bay. Population 300. It has a saw mill and is a fishing station of considerable importance and is one of the principal ports on the island at which all local steamers call.

On August 1, 1908, authority was given to expend \$600 in repairs to the existing wharf by day labour. Work was commenced October 25 and completed March 4, and consisted in replacing some 40 uprights, new waling, where required, also new stringers and decking to replace that which was decayed.

Total expenditure for the fiscal year 1908-9, \$767.76.

RICHARD'S LANDING.

Richard's Landing, district of Algoma, is a small village on the north shore of St. Joseph's island in Georgian bay, distant 9 miles by water from Desbarats, the nearest railway station. Population, 350.

At the last session of parliament, the sum of \$3,000 was appropriated for repairs to the wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour; on October 3 last, authority was also given to construct a stone and gravel approach to the wharf and leave the repairs in abeyance, however, as the approach only cost \$1,500, the remainder of the appropriation was used in making repairs to the wharf.

Work commenced October 12 and carried on to November 2, when it was suspended till January 12, 1909, and carried on to March 31; it consisted in the construction of a stone approach, 200 feet long by 20 feet wide on top, with side slopes of one on one; the top of which received a coating of gravel; the reconstruction of part of the crib-work superstructure, from low water up, 60 feet by 90 feet, at the west end, also the construction of two cribs, 12 feet square, and 4 cribs, 14 feet square; all to a height of 3 feet. The face of wharf, 90 feet long, was repaired with 12-inch by 12-inch square timber. A row of piling was driven the full length of wharf, 145 feet, at 5 feet centres capped with 10-inch by 12-inch timber. The east end of the wharf was also repaired and all cribs were filled with stone.

Total expenditure for fiscal year 1908-9, \$3,000.

ROBIN'S LANDING.

Robin's Landing, Northumberland county, is situated on the north shore of Rice lake. The wharf is used for the shipment of farm produce, &c.

On June 23, 1908, authority was given to expend the sum of \$100 in repairs to the wharf by day labour.

The work consisted in widening the approach to the wharf and putting new rip-rap along the sides, 35 feet in length by 5 feet in height, composed of large stones.

Total expenditure for fiscal year 1908-9, \$95.33.

ROCHE'S POINT.

Roche's Point, York county, is a small summer resort on the west shore of Cook's bay, an arm on Lake Simcoe. Population, 150.

On March 28 last, authority was given to expend the sum of \$500 for the completion of the wharf at this place by day labour.

There was also an expenditure of \$14 for labour towards the completion of this wharf.

Total expenditure for fiscal year 1908-9, \$514.

9-10 EDWARD VII., A. 1910

RONDEAU.

Rondeau is an important harbour of refuge and port of entry, situated on Pointe Aux Pins, about 19 miles south of the city of Chatham and 45 miles west of Port Stanley. It is a favourite summer resort and the terminus of the Sarnia and Rondeau branch of the Père Marquette Railway. Population about 100.

In the inner harbour, and at westerly side along coal dock, a modern and extensive coal handling plant is used by the Lake Erie Coal Company, for unloading coal from their boat, which runs regularly between this point and Conneaut, Ohio.

On September 17, 1908, authority was received to expend the sum of \$400 by day labour, in performance of repairs to piers, for which timber and iron on hand could be utilized. Work was commenced on September 22, and was completed on March 31, 1909. It consisted in repairing damage which had occurred to outer end of eastern pier; in renewing a small portion of the flooring on this pier; in making general repairs to the west pier, and repairing roof and walls of government tool-house.

On July 17, 1908, the westerly pier was damaged by the coal boat *M. & B. No. 1* colliding with the pier, and, in accordance with instructions received, this damage was repaired during the months of August and September, and the cost of same, amounting to \$212.34, was settled for by the Bessemer Dock and Navigation Company, Limited.

On March 26, 1909, a contract was awarded for an extension of 1,000 feet to westerly pier; contract price \$229,000. The proposed structure is to be constructed of close-face timber cribwork substructure, 35 feet wide at bottom and 30 feet at top, filled with stone ballast and reaching to one foot below L.W.L.; superstructure is to be of mass concrete, reaching to a height of 8 feet above L.W.L.

Operations were commenced on February 22, 1909, and were in progress at the end of the fiscal year. Up to that date, a large amount of material was stored on the site of the work.

It is expected the construction of this work will eliminate the present difficulty encountered in maintaining a proper depth of water at the outer entrance to this harbour, owing to the continual filling-in which occurs from the southwesterly or storm direction.

Total expenditure during last fiscal year, including dredging, \$36,415.01.

ROSSEAU.

Rosseau, District of Muskoka, is a summer resort at the northerly end of Lake Rosseau, and is very popular and largely patronized by tourists.

On August 18, 1908, authority was given to expend the sum of \$200 for the completion of the wharf at this place by day labour.

Work was commenced September 28, completed October 22, and consisted in planking portions of wharf, also replacing a number of decayed stringers, and re-shingling a portion of one of the sheds.

Total expenditure for fiscal year 1908-9, \$329.19.

ROSSPORT.

Rosspport, Thunder Bay district, is a village of 200 inhabitants on the main line of the Canadian Pacific Railway, 14 miles west of Schreiber, on the north shore of Lake Superior. It has a fine natural harbour. The chief industry is fishing.

On February 6, 1908, a contract for the construction of a wharf was awarded in the sum of \$7,288.

Work was commenced May 7, completed August 17, and consisted in the construction of a wharf with stone approach, 170 feet by 20 feet wide on top, extending

SESSIONAL PAPER No. 19

from the shore to the cribwork, which is 76 feet long by 20 feet wide, and at the outer end of which there is an 'L' 60 feet long by 20 feet wide. Some 40 feet additional length of approach was added to make the grade easier from the wharf to the rising ground in rear.

Total expenditure for fiscal year 1908-9, \$7,747.50.

ST. JOSEPH.

St. Joseph is situated on the easterly shore of Lake Huron, in the county of Huron, about 14 miles south of Goderich. Population about 50.

On February 20, 1908, authority was received to expend by day labour, the sum of \$300 in completing the approach to wharf at this point. On March 31, 1908, the work had not been completed. Operations were resumed on April 6, and continued until May 29, 1908, when approach was completed; which left the whole work in excellent condition.

The total expenditure during the fiscal year 1908-9, was \$300.62.

ST. LAWRENCE PAVILIONS.

There are seven pavilions which have been built by the Federal government on the islands in the St. Lawrence river:

One on St. John or Howe island, opposite Gananoque.

One on Gordon island, near Gananoque narrows light.

Two on Deer island, one on the north shore of Echo Lodge and one on the south side of Deer island.

One on Grenadier island.

One at Mallorytown landing.

One on Picnic island, near Brockville.

On May 21 last, authority was given to expend the sum of \$1,000 in repairing and painting five of the pavilions by day labour.

Work was commenced July 20 and completed October 24, and consisted in the rebuilding of one of the pavilions from the floor upwards; four others required repairs such as new posts, foundation sills, flooring, railing, &c. All of the five were painted and braced with iron rods connecting the buildings with iron bolts sunk in the rock.

Total expenditure for fiscal year 1908-9, \$875.19.

SAND POINT.

Sand Point, in the county of South Renfrew, is located on the south shore of Chats lake, an expansion of the Ottawa river. It is a transfer point for the traffic taken across to Norway Bay.

At its session of 1908, parliament appropriated \$6,800 towards the completion of a concrete masonry wharf, at this place. The wharf was commenced on February 21, and completed September 25.

The structure consists of a landing head, 50 by 68 feet, and an approach, 232 feet long, built of dry masonry walls battering 1 on 2 and 14 feet wide on top for a distance of 147 feet, and, further, of similar walls, battering 1 on 4, 18 feet wide on top, with 12-inch concrete veneer above low water level, placed on light cribwork under-structure; a backfilling of quarry refuse and gravel topped with road metal at a height of 8½ feet; a one-story umbrella roof freight shed and shelter 10 by 18 feet, and a two-line wrought iron pipe railing on the narrow portion of the approach.

Expenditure in 1908-9, \$4,676.61.

9-10 EDWARD VII., A. 1910

SAUGEEN RIVER.

Saugeen river empties into Lake Huron, at a point about 32 miles from Walkerton and about 43 miles from Sarnia. At the mouth of the river, is situated the thriving town of Southampton.

On December 3, 1908, authority was received to expend the sum of \$20 on slight repairs required to easterly pier. The work was performed between the 22nd and 24th December, 1908, and consisted in the renewal of a portion of stone filling which had been washed out of this pier.

SAULT STE. MARIE.

Sault Ste. Marie, district of Algoma, is situated at the head of St. Mary's river, which connects Lake Superior with Lake Huron. Population, 10,500. It is on the main commercial route from the Great West to the seaboard. The tonnage passing through the Soo canals, during 1907, amounted to 58,217,214 tons.

On May 21, 1908, authority was given to expend the sum of \$675 in replanking the approach to the wharf by day labour. Work was commenced June 9 and completed June 18.

On July 7, authority was given to expend the sum of \$75 in repairs to office in old warehouse for the use of the customs officers.

Work was commenced 22nd and completed 28th July. It was found necessary to protect the angles of the wharf with iron plates and to repair the waterworks in office of warehouse, which had been damaged by frost.

Total expenditure for fiscal year 1908-9, \$877.84.

SEAGULL.

Seagull, or Sailor's Encampment, District of Algoma, is situated on the south-west shore of St. Joseph's island, in St. Mary's river, about 4 miles from Richard's Landing. It is a farming community and very well settled. This place, formerly, was a very well-known point, as it was the head of navigation for sailing craft, being just opposite Neebish rapids.

At the last session of parliament, the sum of \$2,000 was appropriated for the construction of a wharf at this place, and, on August 8, 1908, authority was given to proceed with the work by day labour.

Work was commenced October 9, completed March 27. It consisted in the construction of a wharf of cribs and spaces, 58 feet long by 18 feet wide, of a stone approach, 100 feet by 18 feet wide on top, with side slopes of $1\frac{1}{2}$ on 1. The cribs are spaced 18 feet apart.

Total expenditure for fiscal year 1908-9, \$1,785.54.

SEVERN RIVER.

Severn river, Ontario county, flows from the northerly extremity of Lake Couchiching to the Georgian bay.

The municipal council of Orillia have consented, by resolution of council, to place stop logs in their concrete dam at Ragged rapids on this river in order to raise the water 8 or 9 feet, which should drown out the rapids at McDonald's chute, and the council have assumed liability for land damages as far as McDonald's chute. Authority was given, on October 15 last, to have these stop-logs placed in this dam for this purpose.

Authority was given to have the wooden sills in the two stop log dams on this river, at Washago, removed and replaced by iron braces.

Work was commenced September 15 and completed November 3.

SESSIONAL PAPER No. 19

The work consisted in the removal of the sills and the strengthening of the dams by iron braces forged to fit the spaces and bottom of the river; vertical slash boards were also inserted in each spillway to prevent leakage at low water.

On account of the arrangement made with the municipal council of Orillia, the construction of the dam at McDonald's chute was rendered unnecessary, and the amount appropriated for that purpose was divided into three sums of \$500, \$800 and \$1,300, to be spent at Bennett's, McDonald's chute and Ragged rapids, respectively.

The work at Bennett's consisted in the removal of a rocky shoal containing some 100 cubic yards, making the channel 30 feet wide and 4 feet deep, at low water, and 45 feet long.

The work at McDonald's chute and Ragged rapids consisted in the widening and deepening of the channel by the removal of a point of rock that retarded the flow of water considerably, and in removing from the river the debris left after the construction of the temporary dam at the head of the rapids, which was considered a serious obstacle to the flow of the river.

Total expenditure for fiscal year 1908-9, \$431.87.

SHEGUINDAH.

Sheguindah, District of Algoma, is situated on the north shore of Manitoulin island, at the entrance to Haywood sound, and at the west end of Sheguindah bay. The village is 6 miles south of Little Current and 16 miles north of Manitowaning.

On March 17, 1908, authority was given to expend the sum of \$500 in repairs to the wharf at this place, by day labour.

Work was commenced April 1, completed July 23, and consisted in replacing nearly all the decking, also, providing new sills.

Total expenditure for fiscal year 1908-9, \$498.48.

SHREWSBURY.

Shrewsbury is a small village on the north shore of Rondeau bay, in the county of Kent, 20 miles southeast of Chatham, and 5 miles south of Blenheim; it is the centre of a farming district. Population about 50.

On July 13, 1908, authority was received to expend the sum of \$20 by day labour, in repairing damage done by erosion, to the approach to dock at this point. Work was performed during the latter part of July, 1908.

Total expenditure at this point during the fiscal year 1908-9, was \$17.40.

SILVER CENTRE.

Silver Centre, on the west shore of Lake Timiskaming, 22 miles south of Haileybury, in the district of Nipissing, is the landing for a heavy traffic developed during the past season, on account of the establishment of mines in the vicinity.

The sum of \$4,000 having been granted by parliament towards the construction of a wharf, an examination was made and it was decided to build the pilework head with the present appropriation, if possible, with a view of completing the structure early in 1909.

Accordingly, the structure was designed and work started September 15, 1908, with the Blanche river plant just completed for dredging and converted into a pile driver. Pile driving was completed September 30 and work was discontinued at the end of November.

Work was resumed March 16 and landing head was nearing completion at the end of the fiscal year.

The landing head, 65 by 92½ feet, is 360 feet from shore, drawing 10 feet and built to elevation 13 feet. It is protected on the north side by a continuous ice breaker,

9-10 EDWARD VII., A. 1910

is fully braced, sheeted with 4-inch tamarack and fendered to a batter of 12 to 1 on all landing faces; it has three slips.

Expenditure in 1908-9, \$4,482.64.

SOUTHAMPTON.

Southampton is a prosperous town situated at the mouth of the Saugeen river, in the county of Bruce, on the easterly shore of Lake Huron, 32 miles from Walkerton, the county town; it is the terminus of the Grand Trunk Railway, a harbour of refuge and a port of call for steamers of the Algoma steamship line. Population about 2,000.

At the last session of parliament, the sum of \$3,500 was appropriated for repairs to Chantry island breakwater, and the sum of \$25,000 was also appropriated for an extension of 500 feet to the town dock, and renewal of the outer 100 feet of the superstructure of said dock.

A contract for work to be performed at town dock was awarded on December 6, 1907, in the sum of \$41,000. Operations were commenced on May 20 and the work was completed on December 1, 1908. The extension, together with the renewal of 100 feet of superstructure, as constructed, is 30 feet wide and reaches to 5 feet 3 inches above low water level; it consists of close face timber substructure filled with stone ballast; the superstructure is of concrete side walls, 4 feet wide at base and three feet wide at top, with stone filling between; the surface is covered with gravel. An arrangement was made with the contractors whereby concrete mooring posts were substituted for timber posts called for in the contract; the change was made without additional cost, and the whole work presents an excellent appearance.

On May 23, 1908, authority was received to expend \$175 on urgent repairs required to Chantry island breakwater, and on August 10, following, further authority was received to expend the appropriation of \$3,500 by day labour. Operations were commenced on June 1 and continued until January 23, 1909, when they ceased temporarily, owing to severe weather. Work was again resumed on the 1st and completed on March 27, 1909, and consisted in the removal of two tiers of face-timbers on the north side of the inner end of the mainland breakwater, and the renewal of face-timbers from water level up, on the south side of this portion of breakwater, together with the refilling of stone and gravel. Other general minor repairs were also made.

On the Chantry island breakwater, some 290 feet of the superstructure of the inner end was partially renewed and 418 feet of the breakwater was redecked.

The total expenditure during the fiscal year 1908-9 was \$44,737.06.

SOUTH NATION RIVER.

The South Nation river has an irregular course of 100 miles and flows into the Ottawa river at Wendover, Prescott county. This river with its large watershed, running as it does through flat country, overflows its banks extensively during the spring and summer freshets. In 1900-1902, one of the obstructions, the 'pitch-off,' was lowered. In March, 1908, Hagar's dam, at Plantagenet village, was purchased and removed.

At its session of 1908, parliament granted \$11,800 towards further necessary improvements to the drainage of this important water course.

The work commenced August 18 and was discontinued March 8. The boulder and hard pan shoal, opposite the cemetery, at Plantagenet, was lowered, August 18 to October 2, about 2 feet, over a length of some 400 feet and 250 to 300 feet in width. This work, to lower the grade is part of a definite scheme of drainage improvement, was done with a four horse plough, carts and drag scrapers. The large boulders were blasted. The spoil was deposited to form rip-rap walls along the banks, or widen the strip of land between the roadway and shore line.

SESSIONAL PAPER No. 19

At the 'pitch-off,' work was in progress from August 26 to March 8. A cut was made there, through limestone, 70 to 100 feet wide, 350 to 400 feet long, $2\frac{1}{2}$ feet deep and was completed at the end of November. Through the winter, another cut, 85 feet wide, 175 feet long, $2\frac{1}{2}$ feet deep was made alongside the first one. This work involved the removal of some 2,460 cubic yards of solid rock to a shallow grade.

Total expenditure during last fiscal year, \$9,216.56.

STANLEY ISLAND.

Stanley Island is in the St. Lawrence river, opposite Summerstown, in Glengarry county, some 9 miles northeast of Cornwall. It is a much frequented summer resort.

During the summer of 1907, the government decided to buy a wharf, situated opposite the Algonquin Hotel, for the sum of \$500. The structure, first built in 1880, repaired and enlarged in 1887 and 1900, consisted of : a crib and span headblock, 140 feet long and 25 feet wide; a 24 foot approach formed of a 20 foot span from headblock to a stone embankment which is 40 feet long.

Along the whole front of the headblock, there is a pile addition, 15 feet wide at downstream end and one foot wide at other end.

Repairs to and enlargement of this landing pier were begun in June, 1907, and completed with the exception of the binders, at the end of August following.

When water had lowered sufficient'y in August last, the pile binders were secured and the whole structure completed in the beginning of September.

SYDENHAM RIVER.

Sydenham river has its outlet in Chenal Ecarté, the passage between St. Anne island and the mainland. From its mouth to Wallaceburg it is a large navigable stream, above this point it divides into two branches; north to Wilkesport, 14 miles, and east to Dresden, 15 miles. The principal traffic on this river is in lumber, fence posts and building materials, principally gravel.

On September 28, 1907, authority was received to expend, by day labour, the sum of \$600 in the removal of sunken logs and snags, which were forming obstructions in the branch of the river between Dresden and Tupperville; the work was practically only started when it became necessary to cease operations for the winter. Operations were resumed on April 23, 1908, and, on July 21 following, an additional expenditure of \$600 was authorized, in order to cover the remainder of the river to Wallaceburg. On November 23, 1908, a further expenditure of \$15 was authorized on this work, making a total in all of \$1,215.

On October 7, 1907, authority was received to expend the sum of \$500 in the removal of logs and other obstructions in the north branch of the Sydenham river, between Winters and Wilkesport. When work closed down for the season a balance of \$156.30 remained unexpended on this work. This balance together with an additional amount of \$13.85 was expended in completing the work between October 5 and 31, 1908.

The total expenditure during the fiscal year 1908-9, \$1,465.67.

TENBY BAY.

Tenby bay, district of Algoma is a farming settlement on St. Joseph's island, Lake Huron.

On August 28 last, authority was given to expend by day labour the sum of \$400 in the construction of a freight shed on the government wharf at this place.

Work was commenced October 23 and completed November 14; it consisted in the construction of a freight shed, 16 feet by 40 feet, standing partially on the wharf and partially on small cribs erected for the purpose.

Total expenditure for fiscal year 1908-9, \$399.58.

9-10 EDWARD VII., A. 1910

THAMES RIVER—LIGHTHOUSE WHARF.

Lighthouse wharf is located at the mouth of the River Thames, and was constructed for the purpose of serving the township of Tilbury North, Tilbury West, Tilbury East and Rochester. A draught of 12 feet of water is available up to the dock.

On August 10, 1908, authority was received to expend, by day labour, the sum of \$250 in completing and levelling off the filling required in rear of this dock. The work was performed between September 3 and 30.

On July 16, 1908, authority was received to enter into agreement for the construction of an approach to this dock, material supplied to be paid for at the rate of 12½ cents per cubic yard, place measurement, and the total expenditure on the work not to exceed \$1,425. The work was commenced on July 21 and completed on September 5, 1908, and consisted of the construction of a roadway approximately 1,600 feet long and with a top width of 16 feet.

THESSALON.

Thessalon, District of Algoma, is situated on the north shore of the north channel of Lake Huron. It is an important town containing several industries and a number of large sawmills. Large quantities of lumber are shipped from this place. It is a regular port of call for all liners. Population, 1,400.

On February 21, 1908, authority was given to remove the warehouse from the old wharf, to serve as an extension to the warehouse on the new government wharf. Work was commenced March 2, and completed April 24.

At the last session of parliament, the sum of \$4,000 was appropriated for harbour improvements at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work of procuring the materials and assembling same in a safe place, as near as possible to the site of proposed work, was commenced September 23, and continued till March 31, and was for the purpose of constructing a cribwork breakwater 275 feet in length by 14 feet wide, with an average height of 9 feet, the cribs to be filled to the top with stone and covered with 6-inch timber.

Total expenditure for fiscal year 1908-9, \$2,298.90.

TOBERMORAY.

Tobermoray harbour, Bruce county, is situated at the northwest extremity of the Saugeen peninsula, and possesses perfect shelter from all winds. It consists of the eastern and southwest arms; the latter extending from Lighthouse point, W.B.S. ½ S. 900 yards, with an average breadth of 100 yards. The low limestone shore sinks down almost perpendicularly to 7 or 8 fathoms, which depth, over soft mud, will be found all over this arm, excepting near the bottom, whence a muddy flat extends 120 yards to a depth of 18 feet.

At the last session of parliament, the sum of \$3,600 was appropriated for the construction of glance booms at this place, and on August 8, 1908, authority was given to proceed with the work by day labour.

The work consists in placing large glance booms where necessary, to protect vessels from the rocky sides of the harbour.

The materials for this work, ordered in August, was British Columbia fir, but, owing to delay in transportation, did not reach Parry Sound until too late to tow it in safety to the site of the work.

Total expenditure for fiscal year 1908-9: Materials, \$2,310.80.

TORONTO.

Toronto, York county, is a city of some 360,000 inhabitants, situated on the north shore of Lake Ontario. The harbour is formed by a circular basin, 1½ miles

SESSIONAL PAPER No. 19

in diameter, separated from the lake by a large island (formerly a peninsula) about 6 miles long, making a safe, well-sheltered harbour, capable of containing a large number of vessels.

On April 7, 1908, authority was given to expend the sum of \$14,000 in repairs by day labour, to the breakwater on the south shore of the island.

Work was commenced April 1, and completed August 31, and consisted in placing large stones, weighing one ton and upwards, as rip-rap, along the south face of the breakwater, for a distance of 4,000 feet; in constructing a crib, 86 feet by 12 feet to an average height of 6 feet, to repair a breach in the breakwater, and in renewing, where necessary, the temporary pile breakwater.

On May 1, authority was given to expend, by day labour, the sum of \$900 in repairing the head-block of the east pier of the eastern channel.

On May 29, 1907, instructions were given to prepare contract plans and specifications for the construction of a new western entrance to Toronto harbour, and on May 15, 1908, a contract for the construction of a new western entrance to the harbour was awarded to P. Weddell & Co., in the sum of \$495,000.

Work was commenced July 14 and continued till December 24, when it was closed for the season. It was resumed on March 18, and is still in progress. It consisted in the construction of two parallel piers, 400 feet apart, through the westerly sand bar, 220 feet south of the present western channel. The north pier is 2,220 feet in length by 20 feet in width, and the south pier is 2,500 feet in length, of which 2,000 feet is 20 feet in width, and 500 feet at west end is 30 feet in width; the whole composed of cribwork substructure with concrete superstructure. The channel between the piers is to be 18 feet at low water.

Of this work, up to date, some 472,550 cubic yards scow measurement, of material have been excavated and used for reclaiming about 15 acres on each side of the proposed new channel and about 6 acres in Ashbridge's bay. Three cribs have been sunk in position in the northerly pier and 12 are ready to be sunk.

On June 8, 1908, a contract was entered into, in the sum of \$39,000 for the extension of the island breakwater.

Work was commenced July 8 and suspended on December 5; it consisted in the construction of a line of tongued and grooved sheet piling, 1,500 feet long; of 6 groynes, each 60 feet long by 12 feet wide, of cribwork substructure and concrete superstructure, placed at intervals of 285 feet, centres at right angles to the piling. The north end of each groyne is connected with the shore by a line of close sheet piling. Up to date, this work is about half finished.

On May 22, authority was given to expend the sum of \$5,000 in repairs to the western pier of the Eastern Gap, by day labour.

Work was commenced June 5, completed in August and consisted in the placing of large blocks of stone to form a dry stone wall along the channel side of the pier, for 800 feet by 6 feet wide with an average depth of $3\frac{1}{2}$ feet, also the construction of a crib, 108 feet long, by 12 feet wide and 5 feet in height, connecting the west pier with the east end of the breakwater.

On July 20, authority was given to place stone filling at the rear of the breakwater extension now under contract with Messrs. Miller & Cumming.

Work was commenced September 1, suspended December 19, and consisted in building a dry stone wall to the full height of the close sheet-piling, varying from 4 to 9 feet, for a length of 1,500 feet and an average width of 10 feet at the top and 12 feet at the bottom.

Total expenditure for fiscal year 1908-9, \$192,634.15.

TREADWELL.

Treadwell is a post settlement in Prescott county, and port of call of the steamers of the Ottawa River Navigation Company, and a proposed station on the Canadian

9-10 EDWARD VII., A. 1910

Northern Railway, 13 miles from L'Orignal, the county seat, and 18 miles from Rockland.

During the last fiscal year, a plot of land, some 2,250 feet square, required for a cattle yard and situated along the upstream side of the approach, was purchased by the Crown.

Amount expended, \$404.75.

WHITBY.

Whitby, Ontario county, is situated on the north shore of Lake Ontario, 135 miles west of Kingston and 30 miles east of Toronto. Population, 2,300. This harbour is owned and controlled by the Port Whitby Harbour Company, and was purchased by them from the government in March, 1864, for \$25,150. The breakwater is 3,042 feet in length, and the two protection piers, at the entrance are, one 620 feet long and the other 394 feet long.

At the last session of parliament, the sum of \$5,000 was appropriated for harbour improvements at this place, and, on September 18, 1908, authority was given to proceed with the work by day labour.

The work consisted in repairing a portion of the superstructure of the west breakwater for a length of 1,100 feet by a width of 12 feet and an average depth of 3 feet and filling same to the top with large stone.

Total expenditure for fiscal year 1908-9, \$4,763.98.

WHITE CLOUD ISLAND.

White Cloud, Grey county, is situated in the Georgian bay, at the entrance to Colpoy's bay, some 10 miles northeast from Wiarton. Population 50. A considerable quantity of wood and timber is shipped from this place. It is good grazing and agricultural land.

On May 29, 1907, instructions were given to prepare contract plans and specifications for the construction of a wharf at this place. On December 28, 1907, a contract in the sum of \$4,000 was awarded for the construction of a wharf.

Work was commenced January 14, 1908, and completed May 31. It consisted in the construction of a wharf of cribs and spaces, 140 feet in length, with an 'L' at the outer end, 32 feet by 20 feet, all connected to the shore by a stone approach, 105 feet long by 20 feet wide on top, and having side slopes of 1 in 1.

Total expenditure for fiscal year 1908-9, \$3,495.

WIARTON.

Warton, Bruce county, is a prosperous town at the head of Colpoy's bay, about 32 miles west of Owen Sound. It is the terminus of the Georgian Bay and Lake Erie Branch of the Grand Trunk Railway.

On July 20, 1908, the sum of \$1,000 was authorized for repairs to the breakwater pier at this place by day labour. The work consisted in the renewal of 125 feet at the shore end of the breakwater with concrete walls and stone filling.

Total expenditure for fiscal year 1908-9, \$787.70.

SESSIONAL PAPER No. 19

PROVINCE OF MANITOBA.

GIMLI.

Gimli is a town of some 850 population, on the west shore of Lake Winnipeg, 60 miles north of Winnipeg. For some years, considerable shore erosion has taken place here, the lake having encroached on the public highway and undermined several houses.

During the past season, owing to the abnormal high water, the effect of this erosion has been much more marked. It was decided to build a pile and brush wall along the lake front with a stone toe on the lake side of the structure. The work consists of two parallel rows of piles, 4-foot centres between rows, with piles driven at 8-foot centres on the outer row and 4-foot centres on the inner row. The average penetration is 8 feet and piles are cut off 5 feet above the ground surface.

The space between the piles is closely packed with bundles or fascines of willow brush, the brush being held down by cross-pieces and longitudinal spars, which are placed on top.

The total length of the lake front protected was 2,420 lineal feet.

Four groynes or spurs have been put in at different places for the purpose of breaking the force of the longitudinal wave wash and to aid in the forming of a new beach.

Three of these groynes have been constructed with some 77 cubic yards of stone, which were left over from the construction of the Gimli wharf, and the remaining groyne is of the same type as the pile, brush structure.

Three openings have been left in the protection work, to provide exits for sewers and a small creek.

Actual construction started on September 1 and was completed on November 19, 1905.

Repairs to Wharf.

Some 354 lineal feet of the central portion of the wharf and 20 lineal feet of the inner approach have been replanked with 20,000 feet B.M. 3-inch tamarack.

HNAUSA.

From September 1 to 14, a portion of the Hnausa dock, amounting to 239 lineal feet, was replaced with 3-inch tamarack.

LAKE DAUPHIN.

The Mossy river takes its source in Lake Dauphin, and empties into Lake Winnipegosis. The total length of the river is 21.4 miles, and the fall in that distance is 24.8 feet.

In periods of low water, the upper portion of the river is quite shallow, especially in the rapids, and the discharge of the river very little.

Lake Dauphin with an area of about 200 square miles, forms the drainage basin of a considerable tract of country, which is being rapidly opened for settlement. Occasionally, in years of heavy precipitation and quick run off, the level of the lake is abnormally high and a considerable area of land, contiguous to the lake is flooded.

The object of the work is to increase the discharge capacity of the Mossy river, by dredging through the shoal places, and thereby carry off the surplus water of Lake Dauphin.

In the stretches, having less than 5 feet in depth, it is proposed to dredge a channel with a width of 40 feet, and a minimum depth of $4\frac{1}{2}$ feet.

It is expected that some 4,000 lin. feet of dredging will be accomplished during the coming season, of an average depth of cut of $2\frac{1}{2}$ feet and width of 40 feet.

9-10 EDWARD VII., A. 1910

This will cover a length of four miles of the upper part of the river in which there is a fall of two feet.

In the early part of January, a start was made to construct a dredge to be used for the above work, and on March 31, work was practically completed.

The dredge hull is built of British Columbia fir, and is of the following general dimensions: Length, 50 feet; width, 30 feet, and depth, 4 feet 6 inches.

The dredging machinery consists of a 1½-yard orange peal bucket, operated by a 20-h.p. double cylinder, double drum Beatty hoisting engine.

The total expenditure for the last fiscal year, amounted to \$4,032.21.

MANITOU RAPIDS.

The object of this work is the removal of a reef of rock in the Winnipeg river, about 3 miles above Fort Alexander.

Owing to the extreme high water throughout the year, this work has not been undertaken.

An expenditure of \$110 was incurred for the providing and setting out of buoys to mark the channel in the Winnipeg river below Manitou rapids, and in the channel leading out into the lake.

Total amount expended, \$188.90.

RED RIVER.

Improvements at Mouth.

Dredge *Assiniboine* was put at work here on June 8, and during the three months succeeding, dredged a channel through the bar, giving an effective depth of 5.4 feet at lowest water, or 9.5 feet at the average stage of water during the season.

This channel was used, during the greater part of the season, by most of the boats navigating on Lake Winnipeg, though no attempt was made to stake or buoy it.

Expenditure, \$13,563.67.

ST. ANDREWS LOCK AND DAM.

The progress of the work entailed in the construction of the St. Andrews lock and dam, during the past year, has been entirely satisfactory, and the contract with Messrs. Quinlan & Robertson, for all the masonry work and excavation, is almost completed.

A description of the work performed and rate of progress arranged consecutively by order of months follows:—

April.—The first section of entrance pier No. 1 of the lock begun in the month previous was completed before the spring freshet. This completed 53½ feet of this wall.

The concrete was put in under winter conditions as to heating of materials and protection from frost.

The housing and cofferdam used in the construction of that portion of the dam, built during the winter, were removed before the freshet. The freshet this spring was in no way unusual, the highest water being elevation 701, and no damage was sustained by any part of the work.

Concrete put in place during the month:

Entrance pier No. 1, 360 cubic yards.

May.—The west abutment of dam was carried up from elevation of lock wall and completed during the period, May 4 to 16.

The construction of piers Nos. 2 and 1 was started on the 14th and 23rd inst., respectively. For this purpose a trestle was erected on the permanent dam and the concrete brought, in cars, from the concrete mixing plant on the west side of the lock.

The steam shovel was placed in the canal prism for excavation of canal.

Earth excavated on the west side of the river for the foundations of the east abutment, span No. 6 and pier No. 5 was started.

SESSIONAL PAPER No. 19

The earth from this excavation was used for the purpose of filling in cofferdam for the unwatering of remainder of dam.

The lock pit was unwatered towards the end of the month and kept dry all summer.

The concrete put in place during the month was :

	Cubic yards.
West abutment of dam.....	567
Pier No. 1.....	252
Pier No. 2.....	951
Total.....	1,770

June.—Pier No. 2 of dam was completed on June 3, and pier No. 1 on June 16.

The foundations for entrance wall No. 1 were prepared and the wall itself constructed during the period from June 8 to 22. This wall is built on rock.

During the early part of the month, the foundations for entrance pier No. 6, at the upper end of the canal, were prepared and construction of this pier started on the 24th instant.

The upper end of this pier is built on a slope to withstand ice shoves during the freshet. The foundation is hard-pan.

A $\frac{1}{2}$ yard Smith concrete mixer was installed here to build this pier.

The cofferdam on the east side of the river was completed during this month and unwatering started, a 6-inch centrifugal pump being large enough to take care of the water encountered.

The concrete mixing plant, on the west side of the river, was dismantled, and mixers and crusher erected on the east side of the river for the construction of the remainder of the dam.

Concrete put in place during the month :

	Cubic yards.
Pier No. 2.....	64
Pier No. 1.....	763
Entrance wall No. 2.....	326
Entrance wall No. 6.....	500
Total.....	1,653

July.—Steam shovel was continued during the month at the excavation of canal prism.

The preparation of foundations for entrance wall No. 6 was continued and the construction of this wall was completed on the 16th.

The foundations for entrance wall No. 5 were also prepared, and the construction of this wall began on the 27th instant. Entrance wall No. 5 is a reinforced concrete wall section.

The foundations of entrance wall Nos. 4 and 1 were also gone on with; in the latter, the work was generally hampered by earth slips from the west bank.

The lower entrance to the lock, between entrance piers, was excavated to grade.

The building of the cofferdam, to unwater the remaining portion of the dam, was continued during the month.

The construction of the east abutment was begun on the 27th instant.

9-10 EDWARD VII., A. 1910

Concrete put in place during the month :

	Cubic yards
Entrance pier No. 6.....	1,138
Entrance pier No. 5.....	382
East abutment of dam.....	765
Total.....	2,285

August.—In the early part of the month the contractors made preparations to place the closures in the upper cofferdam with a view to diverting the river to the portion of the dam already completed, spans 1 and 2.

Spar poles were used as needles in closing off seven openings of from 8 to 10 feet wide which, up to the time, had been carrying the discharge of the stream.

The space in front of the needles was filled with stone and a track erected over cofferdam to bring the earth filling required in dump cars from the steam shovel excavation of canal prism.

The construction of entrance pier No. 5 was completed during the month.

The construction of the east abutment, span No. 6, and pier No. 5, of dam, was continued during the month.

A portion of entrance pier No. 1, 52 feet in length, was built during the month.

A temporary earth dam was constructed at the upper end of the canal. This was necessitated by the raising of the water above the dam, and was put in to keep the water out of the canal.

During the month, excavation was carried on at the following places:—

Foundation of entrance pier No. 4.

Foundation of entrance pier No. 1.

Steam shovel excavation in canal prism.

Sloping of sides of canal.

Sloping of east side of river.

On the morning of the 29th, about 30 feet of the upper cofferdam, and 70 feet of the lower cofferdam were carried away, and these were replaced without difficulty.

Concrete put in place during month:—

	Cubic yards.
Entrance pier No. 5.....	416
East abutment and dam.....	2,675
Entrance pier No. 1.....	270
Total.....	3,361

September.—The construction of entrance pier No. 4 was started on the 9th, and completed at the end of the month. This pier is 141 feet long, and is a reinforced concrete section.

The east abutment of the dam and pier No. 5 were completed.

In order to hasten the completion of the cofferdam for the remainder of the dam, dredge *Winnipeg* was put at work on the 14th, excavating between cofferdam, casting the material into the lower cofferdam.

Concrete put in place during the month:—

	Cubic yards.
Entrance pier No. 4.....	573
East abutment and pier No. 5.....	1,215
Total.....	1,788

October and November.—Construction of entrance pier No. 3 was begun on October 2, and completed on November 10. The steam shovel was partly used in the

SESSIONAL PAPER No. 19

excavation for this pier. Some difficulty was experienced in this excavation, owing to earth slips and springs, and considerable shoring and unwatering was necessary.

The construction of entrance pier No. 1 was continued and work carried on to completion on November 10. The construction of this pier was also hampered by earth slips, which required the building of this pier in sections.

Entrance pier No. 3 is built on a hard-pan foundation. The total length of this pier is 315 feet, of which 215 feet is a reinforced concrete section and 100 feet is a gravity section, the latter wall being put in a portion of the length which has to resist considerable thrust from back pressure, due to earth slips.

Entrance pier No. 1 is built continuously on rock foundation.

During the above months, earth excavation was carried on in the canal prism and the filling in rear of upper entrance piers Nos. 5 and 6 was put in.

The unwatering of the cofferdam for the construction of the remaining portion of the dam was started during these months. The pumping plant for this work consisted of one 12-inch, one 8-inch and two 6-inch centrifugal pumps.

A large leak in the upper coffer-wall and several smaller leaks in the lower coffer-wall occasioned considerable difficulty until these leaks were finally stopped.

Concrete put in place during these months:—

	Cubic yards.
Entrance pier No. 4.	77
Entrance pier No. 3.	2,023
Entrance pier No. 1.	943
Total.	3,043

December, January, February and March.—All serious leaks in cofferdam were finally closed and the foundations of the dam unwatered on December 4, and the excavation of earth and loose rock proceeded with.

On December 24, the construction of the dam was begun and progress was uninterrupted until its completion on March 26.

The construction of this portion of the dam was carried on during the winter, and it was necessary to adopt every precaution in the heating of materials forming the concrete and the maintenance of a safe temperature in the work. The dam was built in sections of about 70 feet long, each section being housed in and heated, and work was carried on day and night, thus monolithic results in the concrete.

During the above months the following amounts of concrete were put in:—

	Cubic yards.
Section 1, Dec. 24 to Dec. 31	1,516
Sections 2, 3, 4, January 2 to February 4.	4,852
Pier No. 3, February 23 to March 11.	1,164
Pier No. 4, March 12 to March 26.	1,100
Land Pier East, Mar. 31, unfinished.	97
Total.	8,729

CONSTRUCTION OF LOCK GATES.

The contract for the construction of the lock gates was awarded to Mr. John Burns, of Ottawa, on November 24.

The amount of the contract is \$32,970 and calls for the construction of two complete sets of gates.

The gates are what is known as the solid timber type.

The construction of these gates was started on January 1, 1909, but owing to the delay in delivery of materials, not much work had been done by April 1.

At the present time about 10 per cent of the work has been completed.

9-10 EDWARD VII., A. 1910

Movable Dam, Service and Highway Bridge, Repair Shop, &c.

This contract was awarded to the Canada Foundry Company, Limited, of Toronto, on September 10.

The amount of the contract is \$548,000.

Up to April 1, 1909, no actual erection had taken place.

The total amount expended during the last fiscal year was \$302,630.94.

ST. LAURENT WHARF.

From March 22 to April 1, repairs were effected on the St. Laurent wharf. They consisted in the putting in of 264 cubic yards of stone filling in the outer end of the wharf and the putting in of tie rods.

The cost of the work has been \$362.16.

SELKIRK WHARF.

During the period from November 13 to December 9, some 210 lineal feet of the Selkirk wharf was replanked with 3-inch tamarack, and 90 cubic yards of stone filling was put into the wharf.

The cost of the work has been \$82.

SELKIRK PROTECTION WALL.

During last session, an appropriation of \$500 was voted for the purpose of making repairs to the portions of this work, which were carried away in the spring freshet, last year.

The necessary repairs were made during the months of January and February, and consisting in the replacing of the earth, which had been carried away, by a stone and brush embankment.

WINNIPEG RIVER, IMPROVEMENTS.

The object of this work is the improvement of the Winnipeg river, for navigation purposes, below Kenora, by the removal of a reef of rocks at Throat rapids.

The present navigable channel of the river is through the Dalles rapids, about 9 miles below Kenora. The river here is concentrated in a narrow passage, and, in periods of high water, the fall through the Dalles is increased, the river gorging at this point.

The intention is to enlarge the bed of the river at Throat rapids, the only other passage of the river, and thereby carry off some of the freshet water and reduce the head at the Dalles.

It was decided to take out this rock in the dry season, and, for this reason, it has been found necessary to take advantage of the low stages of water.

The work was originally started on September 20, 1907, discontinued October 9, owing to a sudden rise in the water.

Work was resumed on April 1, 1908, and continued until May 11, when it was found necessary to discontinue, owing to the rise in water in the river. On this latter date, most of the rock which it was proposed to take out, had been blasted, and an amount of 1,674 cubic yards had been removed.

On October 29, operations were resumed.

As most of the work consisted in the removal of broken rock, a stiff-legged derrick was erected and all loose rock was deposited out on the west bank of the river.

In addition to the above work, it was thought advisable to increase the section of the river at a point, known as the 'Narrows,' some three miles above Throat rapids,

SESSIONAL PAPER No. 19

and on completion of the work at Throat rapids, the work at the 'Narrows' was undertaken and some 800 cubic yards of rock were removed.

The whole work was completed on December 31.

The total amount expended during the fiscal year 1908-9 was \$5,135.41.

PROVINCE OF SASKATCHEWAN.

ASSINIBOINE RIVER.

This work consisted in the excavation of a channel across the bend in the Assiniboine river, about 3 miles below the town of Portage la Prairie. The object sought is to afford relief from flooding of lands adjacent, by carrying off the freshet water through this cut, in the spring. The flooding is principally caused by the ice gorging in the bends of the river.

The channel is 1,950 feet in length, average depth of 7 feet, bottom width 20 feet, with side slopes of $1\frac{1}{2}$ on 1. The material is of an alluvial nature.

The work was laid out on September 18, the clearing and grubbing started on the 21st, and actual excavation commenced on September 30. The work was completed on October 31, 1908.

LAST MOUNTAIN LAKE.

An examination was made and a report prepared dealing with the watershed in general. This report was prepared to settle the question of damage done to lands by overflowing after the dam was built at Craven.

The examination clearly showed how necessary it is to have continuous gauge readings to record daily fluctuations of all rivers.

PRINCE ALBERT.

During the fiscal period ended March 31, 1909, a ferry boat, built within the last four years by the city of Prince Albert, was purchased and partly equipped for the purpose of removing boulders from the bed of the North Saskatchewan river, at Prince Albert.

The total expenditure amounted to \$619.54.

PROVINCE OF ALBERTA.

LESSER SLAVE RIVER.

Lesser Slave river, in the county of Edmonton, is a stream discharging into the Athabaska, about 90 miles west of Athabaska Landing. The river is 60 miles in length, varying in width from 300 to 600 feet, and is Lesser Slave lake's outlet. About 21 miles of the lower end is broken by a succession of rapids, which were an interruption to navigation. The department built 26 wing dams during the year 1907-8, and 25 others during the year 1908-9; a large derrick, with orange peel and boulder tongues was also equipped to remove gravel and boulders from the channel and bars, met with at different points along the river, so as to permit navigation to steamboats

9-10 EDWARD VII., A. 1910

carrying freight to settlers round about Lesser Slave lake to Peace River country, as well as all the way north to the Arctic ocean, where trappers and fur-traders are operating.

The 25 dams built in 1907, aggregated a total length of 3,518 feet; the 28 dams built in 1908-9, 4,109 lineal feet, or a total length of 7,627 lineal feet, at a total cost, for the two year's operation, of \$39,042.43, or an approximate cost per lineal foot of \$5.37.

Dredging operations, which were commenced in 1907-8, with a view to improve the channel, were continued during the last fiscal year.

The total expenditure for the past twelve months amounted to \$14,905.61.

The further ballasting of the dams built last season, and the removal of a quantity of boulders and bars from the channel still remain to be done.

BRITISH COLUMBIA.

CAMPBELL RIVER WHARF.

The work in connection with this wharf consisted of some additions and repairs, replacing dolphins, &c. Work commenced on August 26 in getting out piles and towing them to the site of the work. Operations on the wharf were then commenced and continued during the months of September, October, November and December, and were completed by the 31st of the latter month. Some further damage is reported to have been done by the steamers making the landing, carrying away the dolphins protecting the wharf, which is rather exposed, making it difficult to control the steamers using the wharf under adverse winds and strong tides.

Expenditure, \$1,495.35.

CLAYOQUOT WHARF.

Work was resumed on this wharf on July 28 and completed October 31, 1908.

Expenditure, \$2,189.68.

COLUMBIA RIVER GENERALLY (KOOTENAY DISTRICT).

The appropriation of \$36,500 for this service has been expended as follows :—

Columbia at Revelstoke.—A force was engaged from April 1 to 9, 1908, in completing the frame work on the eastern end of the dam, and from the latter date to May 16 in placing rock along the outer end of the dam. From April 1 to May 15, a crew was engaged in installing the machinery for an orange-peel bucket to replace the dipper formerly used on the dredge *Nakusp*. From the latter date to the end of December, the dredge was engaged in widening and deepening the channel between the outer end of the dam and the island opposite. During the months of January, February and March, 1909, the *Nakusp* was not in commission, but resumed work, after a general over-hauling, a few days before the end of the fiscal year.

Columbia above Golden.—The snag boat *Muskrat* was put in commission early in June. During the season, a small wharf was built at Heffner's landing for the convenience of the settlers on the west side of the river at that point. A wing dam, 250 feet in length, was put in at the head of a bar, about half a mile below the Little Warehouse. All the dams requiring it were repaired, and the usual work of clearing the river banks of sweepers and removing snags from the steamboat channel was attended to. At the end of October, the *Muskrat* was taken to Golden, dismantled, and the crew paid off.

SESSIONAL PAPER No. 19

Columbia at Edgewood.—During November a small party was employed getting a camp made and material on the ground in readiness to commence the construction of a wharf. Actual construction commenced on December 21 and continued until the end of February, when the wharf, which is 380 feet in length and 32 feet in width, with a uniform slope of 1 in 12, was completed. It is a good substantial structure and should prove of considerable value to the settlers of Fire Valley and Edgewood.

The expenditure in connection with 'Columbia River Generally' has been as follows :—

Columbia River at Revelstoke (including wharf at Edgewood).....	\$32,083 37
Columbia River above Golden.....	4,412 76
Total.....	<u>\$36,496 13</u>

COQUITLAM RIVER.

The work of clearing this stream of obstructions by the removal of snags, &c., stranded on bars, to admit of the passage of logs, shingle bolts, &c., was commenced on November 11, 1908, and continued at different times, as required, to the end of the fiscal year, March 31, 1909.

Expenditure, \$993.31.

COURTNEY RIVER.

This work was commenced on November 9, being completed on October 27, 1908. Some 1,500 boulders and 42 snags were removed from the bar, at the mouth of this river. Some repairs were made to the bulkhead and 32 buoys were placed in position.

Expenditure, \$1,582.45.

DUNCAN RIVER.

On this river, a force of about fifteen men was engaged from October 8 to November 22, cutting sweepers and removing snags between Haley's Landing and Howser lake.

Expenditure, \$2,468.54.

FRASER RIVER IMPROVEMENT.

The work on the Fraser river for the past fiscal year may be itemized as follows :—

Extending government wharf at New Westminster, from May 1 to July 8, 1908	\$ 2,745 82
Building two groynes or wing dams on Annieville bar, each 600 feet long, and strengthening the dam built last year with rock	15,866 28
New pile-driver	3,500 00
Gasoline launch	800 00
Steamer <i>Dunsmuir</i> , dragging at mouth of river; drag and harrow over bar	2,461 45
Dredge <i>Beaver</i> at Sumas (chartered)	564 00
Removal of snags at Minto Landing by dynamite ..	84 65
Boat-house for launch and house over hoisting engine on wharf	2,122 15
Superintendence, tide gauges, &c.	2,534 37
Expenditure	<u>\$32,603 72</u>
Protection work at Matsqui, in conjunction with the provincial government, each paying half cost ..	2,281 50
Dam at Chilliwack, under similar agreement	2,500 00

9-10 EDWARD VII., A. 1910

The reason for the large balance, \$100,114.78, remaining over is the abandonment of the contemplated construction of jetties or training walls at the Sand Heads, at the mouth of the Fraser river. On the purchase, however, of the new German 'Fruhling' suction dredge, at a cost of \$250,000, it was deemed advisable to keep the matter of the construction of these jetties in abeyance until the result of the anticipated exceptional powers of the new dredge were fully ascertained. This dredge is proving very satisfactory as to results, working up to her specified capacity of 1,500 cubic yards per hour. It is quite possible that her ability to maintain a deep water channel at the mouth of the Fraser may obviate the heavy expense of one or more training walls or jetties, which, until such time as the dredge has proven her powers, need not be considered.

FRASER RIVER ABOVE QUESNEL-COTTONWOOD CANYON.

The expenditure on this work during the past fiscal year was confined to the month of April, 1908, when operations were resumed and the improvements completed. During the summer, a wire cable was put in the canyon to facilitate the passage of steamers by warping up against the strong current. This cable was furnished by our department and placed in position by the crew of the steamer *Charlotte*, which, during the season, made six trips up the river through the canyon. Within the past few days, word was received from Quesnel that some of the eye-bolts have drawn out. Instructions were given to have heavier bolts made and more carefully embedded in the rock.

Expenditure, \$2,492.10.

FRASER RIVER WHARFS.

Under this head the following wharfs were built during the fiscal year ending March 31 last :—

Pitt river, at a cost of.....	\$ 2,212 80
East Haney, at a cost of.. . . .	1,647 09
Donatelli's landing, at a cost of.. . . .	1,650 32
Dewdney, at a cost of....	1,850 66
Brownsville, at a cost of....	1,638 15
Hatzic, at a cost of.. . . .	2,298 11
Rosedale and Agassiz Ferry, at a cost of.. . . .	1,787 64
Port Moody, at a cost of....	2,692 16
Port Haney, at a cost of.. . . .	2,044 70
Total.. . . .	\$17,821.63

HARDY BAY WHARF.

The entire piling was renewed, the superstructure lifted, and flooring replaced. Piles were got in September, 1908, and work was commenced on November 16, being completed on January 9, 1909.

Expenditure, \$1,981.95.

KOOTENAY RIVER AT PROCTER.

Owing to the river freezing over only a small amount of work was done on this service. Work was done from the 12th to the end of March, and, during that time, a number of boulders were removed from the channel.

Expenditure, \$978.33.

SESSIONAL PAPER No. 19

NAAS RIVER.

On the retirement of the old *Snag Scow* from the work on the Skeena river, on the arrival of the new Snag Boat *Cygnets*, on May 1, 1908, instructions were received to make the necessary repairs and put the Snag Scow in shape for work on the Naas river. On May 28, the Snag Scow was towed from the Skeena to the Naas by the tug *Chieftain* and the work of snagging was prosecuted; very good work being done and many snags removed. Operations ceased on August 31.

The expenditure in connection with this Snag Scow, while operating on the Naas river, will be found under the head of 'Dredging, B.C.'

NANAIMO HARBOUR.

The expenditure on this service is represented by the cost of dredging in front of the different wharfs of the city and coal companies; in cutting a channel to the new ferry slip built by the Western Fuel Company, and building a landing stage for the city.

Expenditure—

Dredging, &c.	\$3,251 32
Landing stage.	2,204 12
	\$5,455.44

OKANAGAN RIVER.

On October 13, the small dredging plant used at Long and Woods lakes was moved to Penticton, and from then until the end of November, a small crew was engaged in building a barge and placing thereon the dredging plant moved from Long and Woods lakes. Some dredging was done during December on the Okanagan river, about half a mile from where it leaves Okanagan lake. The dredge known as the *Heron* was tied up for the winter at the end of December.

Work was resumed on this service on March 1. From March 1 to 14, the time was occupied in building a house-boat to be used as quarters for the crew of the *Heron*, the actual cost of which was about \$350. Dredging was then continued where left off at the end of December.

Expenditure, \$4,621.79.

QUATSINO WHARF.

Work was resumed on this wharf on August 1 and completed September 12, 1908.

Expenditure, \$1,005.95.

SALMON ARM WHARF.

From November 6 to 23, a small party was employed building a warehouse on the wharf constructed last spring and in driving some fender piles along the sides of the wharf. From April 25 to August 15, the dredge *Pelican* was engaged dredging a channel from deep water into the wharf.

Expenditure, \$1,433.22.

SIDNEY WHARF.

Work was commenced on this wharf at the end of September, 1908, and completed on January 31, 1909. The dimensions of this structure are as follows: Main wharf, 100 feet by 50 feet, with slip, 8 feet by 20 feet; approach, 360 feet by 20 feet; small warehouse, 18 feet by 36 feet.

Expenditure, \$6,989.82.

9-10 EDWARD VII., A. 1910

SKEENA RIVER.

The work consists in keeping the river clear of snags, brought down annually by the high water, in the interests of the salmon fishermen. Operations were resumed by the old snag scow on April 1, 1908, and continued until she was replaced by the new snag boat *Cygnets*, on May 1, when Captain Noel was placed in charge and the crew transferred. The temporary crew which had taken the *Cygnets* from New Westminster, where she was constructed, to Port Essington, returned here on the tug *Petrel*, which had conveyed the *Cygnets* to the Skeena. The new snag boat continued the work of removing snags and, in some cases, boulders, until the end of October, doing very satisfactory work. She was then hauled out and placed in charge of a caretaker for the winter.

Expenditure, \$12,022.62.

Sooke Harbour.

The preliminary work of building a scow for drilling purposes and fixing up a boarding camp, &c., was commenced on October 16, 1908. Drilling operations were commenced on November 30, but had to be shut down on account of cold weather on January 3. Work was resumed on February 3 and continued until March 18, when the work was closed down owing to the appropriation having been expended. Owing to the exposed condition, the bad weather considerably delayed the operations. The rock was very hard and full of seams, making the work of drilling slow and difficult, as many holes had to be abandoned, owing to the drills following the seams and becoming wedged fast. Springing these holes with powder in some cases relieved the jam but caused delay. The two worst points of the rock have been blasted and broken up, but the material has not yet been removed, there being no appliances for this purpose. Another trouble we had to contend against was the fact that during the winter months the tide was high all day, and, as the rains made Sooke harbour very muddy, it was difficult to find the holes on resuming work each day. The drill scow had to be removed every morning to and from its position on the work, as the site of operations is open to the prevailing winds from the south and southwest.

Expenditure, \$7,196.77.

SPALLUMCHEEN RIVER.

Work in connection with the protection of the bank of this stream at Enderby was commenced in November and continued until the beginning of January. The old protection work was repaired, where requiring it, and new work carried up stream for a distance of 290 feet.

Expenditure, \$2,266.90.

STICKINE RIVER.

The geographical position of this work, between Glenora and Telegraph Creek, the practical head of navigation on the Stickine river, is, very approximately, latitude 58 north and longitude 131 west. It is situated in the constituency of Comox-Atlin.

Operations were commenced October 15, at Glenora riffle, half a mile above Glenora, and consists of the removal by blasting, of some 22 boulders that were too large to be otherwise handled. This work was completed November 15, and operations were begun at Big riffle, the worst place on the river, and where there was a reef of bad rock running across the stream. The high points were blasted off, but the work was stopped on December 2.

On February 1, 1909, work was resumed, at Six Mile creek, where seven large boulders were blasted and removed, as well as a sunken reef. This work was com-

SESSIONAL PAPER No. 19

pleted by February 15. From February 16 to 28, work was in progress at the mouth of the First South Fork of the Stickine, about 2 miles below Telegraph creek. Here a sunken reef, about 120 feet long and 75 feet wide (at its widest part) was blasted down to low water line, an average of some three feet being taken off. On March 1, work was resumed at Big rattle and the high points of the sunken reef were drilled and blasted. The work was closed down on March 31, 1909.

Expenditure, \$5,175.47.

THOMPSON RIVER.

The dredge *Pelican* was engaged in cutting a channel across a bar at the head of Chase's riffle, from August 18 to November 21, and was then moved to Chase's landing to deepen the approach to the wharf. During December, the bar at the mouth of Little river was dredged to a sufficient depth to allow the tug boats to pass, and, at the end of the month, the crew was laid off until the end of February, when dredging was resumed and continued until the end of March.

Expenditure, \$12,363.31.

UNION BAY WHARF.

Owing to a dispute as to the location of this wharf, the commencement of the work was delayed until too late to come within the life of the appropriation, but all the necessary material for the construction of the wharf has been delivered and a further vote of \$3,000 has been asked to cover the cost of labour in erection, which work will be begun as soon as the money is available.

Expenditure, \$2,848.48.

UPPER LILLOOET RIVER.

This work was started on November 1, 1908, that is a camp was made, but, owing to high water, no work of any consequence was done until November 15, when the removal of jams was commenced and continued until December 31, when it closed down for the winter. The balance remaining of the appropriation did not admit of work being resumed before the expiration of the fiscal year at the end of March last, the month of spring rise.

Expenditure, \$2,484.01.

VANCOUVER HARBOUR.

The comparatively large appropriation under this head was given with the idea of beginning the work of removing Parthia shoal in the First Narrows. Although a menace to ships of heavy draft entering or leaving the harbour at extreme low tide, and in the interests of the constantly increasing traffic of this port, it was not imperative that the work of removal should be commenced at once, or until such time as a complete survey would enable us to approximately estimate the cost before committing the government to a heavier expenditure than was realized at the time of making this initial appropriation. Since then, representations have been made to the government for a comprehensive scheme of heavy dredging operations in False creek and Coal harbour, and in widening the entrance to the First Narrows. To arrive at some idea of the cost and magnitude of this work, it was necessary to have a full survey and complete set of soundings. False creek had already been surveyed and borings were made during the summer of 1908. Since January 1 last, a survey of Coal harbour and the First Narrows is being made. The former is completed and survey is now being made at the Narrows, where the work is exceptionally difficult, as the ebb and flood tides pass through the Narrows at the rate of 8 and 9 knots per hour, with practically no interval, or not more than 15 minutes of slack water, making the work of sounding one of difficulty and care. In addition, the fogs of the winter months made work at

9-10 EDWARD VII., A. 1910

times impossible. Fortunately, Coal harbour gave us the chance to work when the Narrows were impossible. The latter are now, under very improved conditions, being carefully surveyed and a couple of months, it is hoped, will see this work completed.

Expenditure, \$2,004.95.

VICTORIA HARBOUR.

The operations under this head consisted of the work of the five yard dipper dredge *Ajax*, the two yard dipper dredge *Mud Lark*, and the rock drilling plant.

(a) Dredge *Ajax*.—This is a five yard dipper steel hull dredge, built by the Polson Iron Works, of Toronto, and assembled at New Westminster. She was given her first trial on August 22 last, accepted and practically placed in commission on that date, subject to the terms of contract requiring a 30 days' working test, and a further test of five months under ordinary conditions. She left for Victoria on September 4, where she has remained at work on the entrance channel between the outer and inner harbours and where she has been doing satisfactory work.

Expenditure, \$20,903.

(b) Dredge *Mud Lark*.—This dredge is a wooden hull with two yard dipper and was purchased by the Dominion government from Messrs. R. P. Rithet & Co., Ltd., of Victoria, B.C., on August 31, 1893. She has now been 16 years in the government service and was some two or three years in commission before purchase. She worked in Victoria harbour from April 1 to June 18 last, when she went to Union, B.C., to deepen in front of the coaling wharfs at that point (which service was charged to 'Dredging B.C.'). She returned to Victoria at the end of June, where she remained until August 14, when she was ordered to Nanaimo to deepen in front of the coaling and other wharfs in that harbour. She returned again to Victoria on September 14, and, with the advent of the *Ajax*, was placed in the upper harbour, where she is now at work. Considering her age and many years of hard work, she is still giving a good account of herself, and will, it is hoped, for some years to come. Naturally her expenses in renewals and repairs have been somewhat heavy.

Expenditure, \$20,605.83.

(c) Rock drilling plant.—Our appliances for this purpose are somewhat antiquated. This work of blasting was commenced on Mud Lark rock, at the entrance to the Canadian Pacific Company's slips on July 17 last and completed on October 9. Her work totalled—

Number of holes drilled....	276
Total length of holes....	924 feet.
Diameter of holes....	2½ inches.

On October 10, the drill platform, &c., was moved to Tuzo rock and work continued there until closed down on March 29th last. The work totalled:—

Number of platforms set....	13
Number of holes drilled....	511
Total length of holes....	2,155 feet 3 inches.
Diameter of holes....	2½ inches.

The expenditure in connection with Victoria harbour represented by the dredge *Ajax* and *Mud Lark*, and the drilling plant was as follows:—

<i>Ajax</i>	\$20,903 00
<i>Mud Lark</i>	20,605 83
Rock drilling plant....	8,700 11
Total..	\$50,208 94

SESSIONAL PAPER No. 19

WILLIAMS HEAD.

Quarantine Station.

This work consisted of repairs to main wharf, which is now in good condition. The repairs comprised an almost complete renewal of the superstructure, by new caps, joists and planking and some new fender piles.

The intake pipe and settling chamber in connection with water works were overhauled and all woodwork renewed, and the valves were rearranged to facilitate the cleaning of the chambers when necessary.

A new boat-house was built for the gasoline launch. The old one was hauled out of the water and converted into a workshop for use of the staff at the station.

Expenditure, \$9,937.39.

WOODS AND LONG LAKES.

From April 1 to June 15, a party was employed on this work, in completing the approach to the bridge erected across the channel connecting the lakes; in driving protection piles, and in mattrassing the Woods lake end of the channel to prevent it being scoured by the heavy waves which are of frequent occurrence on Woods lake; deepening the channel with a Stanley scraper, and in installing a small dredging plant, purchased for this service. Work was practically closed down from June 15 to July 29, owing to a delay in the arrival of the bucket. The latter having arrived, dredging was commenced on August 3 and continued until the completion of the channel, about September 28. From this date, the party was employed until October 14 in protecting the head of the outlet of Long lake; dismantling the dredge and shipping the machinery to Penticton for use on the Okanagan river. The channel opened between Woods and Long lakes is 640 feet in length, 40 feet in width, and has a mean depth of 4.5 feet. The bridge erected across the channel is a good substantial structure. The main span is 40 feet long, 12 feet wide, and has a headroom of 20 feet.

Expenditure, \$4,936.71.

9-10 EDWARD VII., A. 1910

DREDGING OPERATIONS.

During the fiscal year 1908-9, dredging was performed in the following places:—

PROVINCE OF NOVA SCOTIA.

Battery Shoal, Cape Breton county.
Dominion Coal Company, wharf, Louisburg, Cape Breton county.
Lewis wharf and shoal outside, Cape Breton county.
La Have river, Lunenburg county.
Liverpool, Queens county.
Marine Slip, Yarmouth, Yarmouth county.
Pictou bar, Pictou county.
Port Mulgrave, Guysborough county.
Sherbrooke, Guysborough county.
Yarmouth, Yarmouth county.

PROVINCE OF NEW BRUNSWICK.

Blacks Harbour, Charlotte county.
Clifton, Kings county.
Flewellings wharf, Kings county.
Hampton, Kings county.
Harbour channel, St. John, St. John county.
Hillyards wharf, Dalhousie, Restigouche county.
Long island, Kennebecasis river, Kings county.
L'Etété, Charlotte county.
Moss Glen, Kings county.
Murphys wharf, Perry Point, Kings county.
Oak Bay, Restigouche county.
Reids Point wharf, Kings county.
Rothesay, Kings county.
Sealys shoal, Kings county.
St. Andrews (new wharf), Charlotte county.
St. Andrews, basin, eastern entrance, Charlotte county.
St. George, Charlotte county.
Traverse, Restigouche county.
Whitehead, Kings county.
Winter port berths, St. John, St. John county.

PROVINCE OF PRINCE EDWARD ISLAND.

Annandale, Kings county.
Murray river, Kings county.
Murray harbour south, Kings county.
McPhersons cove, Grand river, Kings county.
Pownal, Queens county.
Souris, Kings county.
Victoria (Crapaud), Queens county.

SESSIONAL PAPER No. 19

PROVINCE OF QUEBEC.

Bar between Campbellton and Mission Point, Bonaventure county.
Mission Point, Bonaventure county.

PROVINCE OF NOVA SCOTIA.

BATTERY SHOAL, CAPE BRETON COUNTY.

The dredge *Cape Breton* was engaged from the 18th to 21st, 23rd, 26th, 27th and 30th May, and 1st to 15th and 20th to 26th and 29th June, and 1st to 4th, 8th, 22nd, 23rd, 30th and 31st July at Battery Shoal, Louisburg, Cape Breton county, removing 13,545 cubic yards clay, stone and boulders, at a cost of 52.59 cents per cubic yard. On several occasions, an effort was made to place this dredge for work at Big Lorrain, which on each occasion failed, leaving this work and Louisburg unfinished.

DOMINION COAL CO. WHARF, LOUISBURG, CAPE BRETON COUNTY.

On May 22, 1908, the dredge *Cape Breton* removed two lumps, 210 cubic yards, from the Dominion Coal Company pier, at a cost of 67.39 cents per cubic yard. The material dredged here was clay and coal.

LEWIS' WHARF AND SHOAL OUTSIDE.

From May 19 and 20 and June 27 and 20, and July 9, 10, 13 to 18, 20, 21 and 29, this dredge was engaged at W. W. Lewis' wharf and at a shoal outside, removing 11,130 cubic yards of ballast, sand, stone and clay, at a cost of 35.29 cents per cubic yard.

LA HAVE RIVER, LUNENBURG.

From April 6 to May 14, 1908, the dredge *Northumberland* removed 128,086 cubic yards mud, sawdust and debris from the La Have river, Lunenburg county, N.S., at a cost of 3.43 cents per cubic yard, when the dredge was ordered to Liverpool, Queens county.

LIVERPOOL, QUEENS COUNTY.

From May 15 to July 31, 1908, the dredge *Northumberland* removed from the Liverpool basin, 57,813 cubic yards mud and silt, at a cost of 19.54 cents per cubic yard.

MARINE SLIP, YARMOUTH, YARMOUTH COUNTY.

From April 18 to 25, 1908, the dredge *Canada* removed 1,700 cubic yards mud, &c., at the Marine Slip, Yarmouth, Yarmouth county, at a cost of 70.12 cents per cubic yard.

PICTOU BAR, PICTOU COUNTY.

From April 28 to May 20, 1908, the dredge *St. Lawrence* was engaged completing the work on the Pictou bar, Pictou county, to a depth of 25 feet, L.W.S.T., by removing 7,560 cubic yards sand, at a cost of 48.98 cents per cubic yard.

PORT MULGRAVE, GUYSBOROUGH COUNTY.

From April 30 to May 11, 1908, the dredge *George McKenzie* was engaged dredging at Port Mulgrave, Guysborough county, in front of Messrs. Lowgies wharf, forming a channel and basin, by removing 3,735 cubic yards mud and clay, at a cost of 21.87 cents per cubic yard.

9-10 EDWARD VII., A. 1910

SHERBROOKE, GUYSBOROUGH COUNTY.

From May 12 to July 31, 1908, the dredge *George MacKenzie* was engaged at Sherbrooke, Guysborough county, removing 15,925 cubic yards boulders and gravel, at a cost of 35.48 cents per cubic yard.

YARMOUTH, YARMOUTH COUNTY.

From April 26 to June 30, and July 24 to 31, 1908, the dredge *Canada* was engaged at Yarmouth, Yarmouth county, removing 34,735 cubic yards mud, at a cost of 34.74 cents per cubic yard.

PROVINCE OF NEW BRUNSWICK.

BLACKS HARBOUR, CHARLOTTE COUNTY.

From December 16 to 28, 1908, the dredge *New Dominion* was engaged at Black's Harbour, Charlotte county, removing 2,055 cubic yards mussel mud and gravel, at a cost of 52.31 cents per cubic yard.

CLIFTON, KINGS COUNTY.

From June 10 to 13, 1908, the dredge *New Brunswick* was employed dredging at Clifton wharf, where it removed 620 cubic yards stone and gravel, at a cost of 32.91 cents per cubic yard.

FLEWELLINGS WHARF, KINGS COUNTY.

From May 23 to June 2 the dredge *New Brunswick* was engaged improving the channel at Flewelling's wharf, removing 1,400 cubic yards clay, stone and mud, at a cost of 29.51 cents per cubic yard.

HAMPTON, KINGS COUNTY.

The dredge *New Brunswick* was employed from October 16 to November 4, 1908, at Hampton channel and wharf, removing 6,020 cubic yards sand, &c., at a cost of 32.86 cents per cubic yard, the work being unfinished.

HARBOUR CHANNEL, ST. JOHN.

From April 1 to October 29 and November 7 to 25 and December 19 to March 16, 1909, the dredge *W. S. Fielding* was engaged on the outer entrance and on the foul ground, St. John harbour, improving the width of the channel to 400 feet, and to a depth of 30 feet, L.W.S.T., removing 336,870 cubic yards stone, gravel, mud and sand, at a cost of 21.24 cents per cubic yard.

HILYARDS WHARF, DALHOUSIE, RESTIGOUCHE COUNTY.

The dredge *St. Lawrence* was employed at Hilyards wharf, Dalhousie, Restigouche county, from October 1 to November 9, 1908, removing 15,400 cubic yards mud and blue clay, at a cost of 21.24 cents per cubic yard.

LONG ISLAND, KENNEBECASIS RIVER, KINGS COUNTY.

From April 15 to May 23, and June 18 to 22 and November 14 to 18, 1908, the dredge, *New Brunswick* was engaged at Long Island, Kennebecasis river, in dredging and driving piles at Mathers, and removing 5,380 cubic yards brick, clay and gravel, at a cost of 37.95 cents per cubic yard.

SESSIONAL PAPER No. 19

L'ÉTÊTÉ, CHARLOTTE COUNTY.

The dredge *New Dominion*, from November 27 to 30, and December 1 to 15, 1908, removed 4,145 cubic yards soft black mud at L'Etêté, Charlotte county, at a cost of 28.64 cents per cubic yard, and finishing the work there.

MOSS GLEN, KINGS COUNTY.

At Moss Glen, Kings county, the dredge *New Brunswick* removed, from June 15 to 17, 1908, 770 cubic yards hard clay and gravel, at a cost of 21.66 cents per cubic yard.

MURPHYS WHARF, PERRYS POINT, KINGS COUNTY.

From July 1 to 9, and November 5 to 7, 1908, the dredge *New Brunswick* was engaged dredging at Murphys wharf, Perrys Point, Kings county, removing 9,050 cubic yards mud, clay, &c., at a cost of 10.50 cents per cubic yard.

OAK BAY, RESTIGOUCHE COUNTY.

From July 29 to August 8, 1908, the dredging at Oak Bay, Restigouche county, was performed by the *St. Lawrence*. Some 7,770 cubic yards sand was removed, at a cost of 21.92 cents per cubic yard.

REIDS POINT WHARF, KINGS COUNTY.

From June 3 to 9, and November 10 to 13, 1908, the dredge *New Brunswick* was employed at Reids Point wharf, Kings county, removing 980 cubic yards hard clay and gravel, at a cost of 46.48 cents per cubic yard.

ROTHESAY, KINGS COUNTY.

At Rothesay, Kings county, the dredge *New Brunswick* was engaged November 19 and 20, in removing 130 cubic yards hard clay, stone, &c., at a cost of 17.43 cents per cubic yard.

SEALYS SHOAL, KINGS COUNTY.

From July 20 to October 15, 1908, the dredge *new Brunswick* was employed on Sealy's shoal, improving the channel, removing 34,615 cubic yards sand, logs, clay, &c., at a cost of 11.20 cents per cubic yard.

ST. ANDREWS, CHARLOTTE COUNTY.

From May 21 to August 24, 1908, the dredge *New Dominion* removed 20,250 cubic yards red clay, gravel, stone, &c., from the foundation of new wharf at St. Andrews, at a cost of 24.46 cents per cubic yard, and from August 25 to September 9, 1908, and January 8 to March 31, 1909, this dredge removed 20,550 cubic yards sand, shells, &c., from the St. Andrews basin (eastern entrance), at a cost of 34.35 cents per cubic yard.

ST. GEORGE, CHARLOTTE COUNTY.

From September 10 to November 26, 1908, the dredge *New Dominion* was engaged at St. George, Charlotte county, removing 12,720 cubic yards sand, shells, edgings and saw-dust from the channel and basin there, at a cost of 43.98 cents per cubic yard.

9-10 EDWARD VII., A. 1910

TRAVERSE, RESTIGOUCHE COUNTY.

From August 9 to September 30, 1908, the dredge *St. Lawrence* was engaged dredging at the Traverse, Restigouche county, removing 24,290 cubic yards sand, at a cost of 29.66 cents per cubic yard.

WHITEHEAD, KINGS COUNTY.

From June 23 to 30, 1908, the dredge *New Brunswick* was employed dredging at wharf at Whitehead, Kings county, removing 2,500 cubic yards clay and gravel, at a cost of 16.07 cents per cubic yard.

WINTER PORT BERTHS, ST. JOHN, ST. JOHN COUNTY.

From October 30 to November 6, and November 27 to 30, and December 1 to 17, 1908, the dredge *W. S. Fielding* was engaged at the winter berths, St. John harbour, in removing rocks, boulders and in cleaning, from the steamship berths, to a depth of 31 feet. L.W.S.T., 13,675 cubic yards being removed, at a cost of 28.17 cents per cubic yard.

The dredge *W. S. Fielding* is 42 feet beam, and, as the bucket ladder drops in the centre of the dredge, the work cannot be performed closer than 20 feet from the sides of the winter port wharfs, leaving a beam of 20 feet next the wharfs, with the places 20 to 30 feet depth at spring tides.

DREDGING IN PRINCE EDWARD ISLAND.

MURRAY RIVER, KINGS COUNTY.

From July 15 to September 26, 1908, the dredge *Montague* was engaged dredging at Murray river, Kings county, improving the channel and at the wharf, by removing 27,550 cubic yards mud and stone, at a cost of 35.39 cents per cubic yard.

MURRAY HARBOUR SOUTH, KINGS COUNTY.

From October 15 to November 23, 1908, the dredge *Montague* was employed at Murray Harbour south, improving the channel, by removing 4,650 cubic yards sand and mud, at a cost of 42.87 cents per cubic yard.

MC PHERSON'S COVE, GRAND RIVER, KINGS COUNTY.

The dredge *Montague* was engaged from May 26 to June 11 and July 10 to 14, 1908, at McPherson's cove, improving the depth of water in front to 10 feet, L.W.S.T., and sides of wharf graded to 6 feet at 180 feet from the front of wharf, 40 feet wide up the sides of wharf, removing 7,700 cubic yards mud and sand, at a cost of 52.33 cents per cubic yard.

ANNANDALE, KINGS COUNTY.

At the public wharf, Annandale, Kings county, the dredge *Montague* was employed from June 12 to July 9, 1908, removing 11,800 cubic yards mud and sand, to a depth of 10 feet, at L.W.S.T., at a cost of 32.28 cents per cubic yard.

POWNA, QUEENS COUNTY.

The dredge *Prince Edward* was employed dredging at Pownal bay wharf, Queens county, from September 29 to November 23, and removed 5,985 cubic yards hard clay, brick and mud from the channel and basin there, at a cost of 61.23 cents per cubic yard.

SESSIONAL PAPER No. 19

SOURIS, KINGS COUNTY.

From May 6 to 25 and November 24 to 30, 1908, the dredge *Montague* was engaged dredging the harbour of Souris, Kings county, grading from 20 to 12 feet L.W.S.T., removing 5,350 cubic yards sand, clay and snags, at a cost of 64.40 cents per cubic yard.

VICTORIA (CRAPAUD), QUEENS COUNTY.

From May 1 to September 28, 1908, the dredge *Prince Edward* was engaged dredging at Victoria (Crapaud), Queens county, removing, at the channel and at the wharfs, 34,695 cubic yards sand, mud, &c., at a cost of 37.87 cents per cubic yard.

PROVINCE OF QUEBEC.

CAMPBELLTON AND MISSION POINT, BONAVENTURE COUNTY.

From June 20 to July 14, 1908, the dredge *St. Lawrence* was engaged improving the bar between Mission Point and Campbellton, N.B., while a ship was loading at Mission wharf, removing 7,770 cubic yards sand, &c., at a cost of 41.52 cents per cubic yard. This work was not finished.

MISSION POINT, BONAVENTURE COUNTY.

The dredge *St. Lawrence* was engaged at Mission Point, Bonaventure county, from June 1 to 19, and from July 15 to 28, 1908, removing 9,450 cubic yards sand, gravel and rubbish, at a cost of 47.93 cents per cubic yard. The work here was completed.

DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the maritime provinces:—

The Self-Propelling Elevator Dredge 'Canada' (iron hull).

Length over all, 130 feet; beam, 20 feet; draft, when loaded, aft, 11.5 feet; draft when loaded, forward, 7 feet; least working depth, 7 feet; greatest working depth (ladder, 24 buckets), 16 feet.

Capacity of hopper for spoil material, 90 cubic yards.

Speed when light and newly painted, 6 to 7 miles per hour.

Speed when loaded, 3 to 4 miles per hour.

Daily rate of dredging in hard bottom, 180 to 270 cubic yards.

“ “ with ordinary digging, 180 to 360 cubic yards.

“ “ in soft material, 360 to 450 cubic yards.

“ “ using barges to remove spoil, 600 to 1,000 yards.

Number of steel barges used, two.

The Spoon Dredge 'New Dominion' (wooden hull).

Length over all, 90 feet; width, 28 feet; draft, 5½ feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

“ “ with ordinary material, 450 cubic yards.

“ “ on soft material, 600 to 700 cubic yards.

Number of dump scows or barges used, two.

9-10 EDWARD VII., A. 1910

The Self-Propelling Elevator Dredge 'St. Lawrence' (iron hull).

Length over all, 175 feet; beam, 30 feet; draft, when loaded, aft, 13.5 feet; draft when loaded, forward, 8.5 feet; least working depth (ladder with 32 buckets dropped 30 feet from bow), 8.5 feet; greatest working depth (bucket ladder dropped 40 feet from bow), 28 feet.

Capacity of hopper for spoil material, 350 cubic yards.

Speed when light, 6 to 7 miles per hour.

Speed when loaded, 3 to 4 miles per hour.

Daily rate of dredging hard material, 350 to 700 cubic yards.

" " ordinary earth, 750 to 1,000 cubic yards.

" " soft material, 1,050 to 1,400 cubic yards.

" " using barges to remove spoil, 1,200 to 1,600 cubic yards.

Number of steel barges used, three.

The Spoon Dredge 'Prince Edward' (wooden hull).

Length over all, 80 feet; width, 28 feet; draft, 6 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

Daily rate of dredging with ordinary material, 500 cubic yards.

Daily rate of dredging in soft material, 600 to 700 cubic yards.

Number of dump scows used, 3.

The Spoon or Dipper Dredge 'Geo. McKenzie' (wooden hull).

Length, 90 feet; width, 28 feet; draft 6 feet; greatest working depth, 22 feet.

Daily rate of dredging in hard material, 350 cubic yards.

Daily rate of dredging in ordinary material, 500 cubic yards.

Daily rate of dredging in soft material, 600 cubic yards.

Number of dump scows or barges used, two.

The Boom and Dipper Dredge 'Cape Breton' (steel hull).

Length, 91 feet; beam, 36 feet; draft, $7\frac{1}{2}$ feet; greatest working depth, 34 feet.

Daily rate of dredging in hard material, 1,000 cubic yards.

Daily rate of dredging in ordinary material, 1,500 cubic yards.

Daily rate of dredging in soft material, 2,000 cubic yards.

Number of barges used (each of 200 yards capacity, steel), three.

The Clam Shell Dredge 'New Brunswick' (wooden hull).

Length over all, 90 feet; width, 25 feet; draft, $2\frac{1}{2}$ feet; greatest working depth, 17 feet.

Daily rate of dredging in hard material, 180 cubic yards.

Daily rate of dredging with ordinary material, 300 cubic yards.

Daily rate of dredging soft material, 450 cubic yards.

Number of decked scows used, 3 as at present and 2 bottom dumping scows.

The Self-propelling Elevator and Sand Pump Dredge 'W. S. Fielding' (steel hull).

Length over all, 247 feet; width over all, 42 feet; draft when loaded, aft, 19 feet; greatest working depth, 61 feet.

Capacity of hoppers for spoil, 1,000 cubic yards.

Speed when light, 7 miles per hour.

Speed when loaded, 4 miles per hour.

Daily rate of dredging, 2,000 cubic yards with buckets.

SESSIONAL PAPER No. 19

Daily rate of dredging, 1,000 cubic yards with sand pump.

Daily rate of dredging using barges to remove spoil, 1,000 to 4,000 cubic yards.

Number of steel barges used, four.

The spoon Dredge 'Montague' (steel hull).

Length over all, 90 feet; width, 37 feet 8 inches; draft 5 feet 6 inches; greatest working depth, 28 feet.

Daily rate of dredging, 10 hours, 1,000 cubic yards.

Number of barges used, two, 72 feet long, 19 feet 8 inches wide, depth, 7 feet.

The Sand Pump Dredge 'Northumberland' (steel hull).

Length, 130 feet; agitator, 65 feet; width, 52 feet, draft, 7 feet, working depth, 40 feet.

Daily capacity, 2,000 to 4,000 cubic yards in 10 hours.

Number of steel barges used, two.

Tug 'Cricket.'

Length, 36.5 feet; beam, 7.3 feet; draft, 3.10 feet; horse-power, 4.

Tug 'Rona.'

Length, 85 feet; beam, 19.3 feet; draft, 8 feet; horse-power, 25.

One pile-driver, engine and boiler fitted on scow.

One stone lifter, engine and large grips (no boiler).

Tug 'Helena.'

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 57.

MEMORANDUM of quantities removed by the several dredges in the maritime provinces, &c., during the fiscal year 1908-9.

	Cubic yards.
<i>St. Lawrence</i>	72,240
* <i>Canada</i>	36,435
<i>New Dominion</i>	59,720
<i>Prince Edward</i>	40,680
* <i>Geo. McKenzie</i>	19,660
* <i>Cape Breton</i>	24,885
<i>New Brunswick</i>	51,465
<i>W. S. Fielding</i>	350,545
<i>Montague</i>	57,050
* <i>Northumberland</i>	15,899
	898,579

*Quantities for these dredges are only given to July 31, 1908, after which Mr. C. M. Graham, superintendent dredging, Nova Scotia, had control of these dredges.

9-10 EDWARD VII., A. 1910

CLASSIFICATION OF Disbursements of the Dredges in the Maritime Provinces during the year ending March 31, 1909.

DREDGE 'ST. LAWRENCE.'

Items.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	526 98	625 62	621 63	621 63	625 00	622 91	624 93	699 32	515 70	309 00	305 25	249 73	6,347 42
Coal.....	209 83	223 56	415 25	354 20	297 00	506 00	570 62	...	354 75	...	...	80 85	3,012 06
Provisions.....	72 91	274 88	...	772 71	303 52	240 54	144 18	...	390 04	27 74	...	...	2,226 52
Stores.....	317 29	12 77	8 00	263 19	...	...	...	...	22 66	6 65	...	62 20	692 67
Equipment.....	...	...	74 88	...	...	...	...	...	...	...	...	30 38	105 26
Water.....	...	...	10 00	...	10 50	7 90	...	...	10 00	10 00	...	...	48 40
Repairs.....	9 35	...	174 58	566 21	...	...	155 00	...	2,019 64	...	306 49	118 41	3,224 68
Pilotage.....	50 00	100 00	...	...	4,435 00	122 00	...	...	30 30	...	...	...	457 30
Towage.....	20 00	...	1,170 00	...	...	1,010 00	...	...	768 00	...	...	...	7,383 00
Wharfage.....	13 25	5 50	...	...	75 00	27 84	19 75	...	24 84	42 49	...	33 34	20 00
Contingencies.....	...	...	10 83	16 55	...	...	...	...	...	...	...	...	269 39
Totals.....	1,219 52	1,242 33	2,485 17	2,594 18	5,746 02	2,537 22	1,514 48	699 32	4,165 93	395 88	611 74	574 91	23,786 70
Working expenses.....	1,210 17	1,242 33	2,310 59	2,027 97	5,746 02	2,537 22	1,514 48	699 32	2,116 20	395 88	305 25	226 50	20,332 02
Repairs, ordinary.....	9 35	...	174 58	...	...	...	...	...	141 92	...	...	...	398 85
" extraordinary.....	...	...	566 21	...	...	...	...	...	1,004 72	...	306 49	348 41	3,125 83
Totals.....	1,219 52	1,242 33	2,485 17	2,594 18	5,746 02	2,537 22	1,514 48	699 32	4,165 93	395 88	611 74	574 91	23,786 70

SESSIONAL PAPER No. 19

DREDGE 'CANADA.'

Wages.....	472 68	632 58	632 00	629 61	646 70	632 00	632 00	582 67	328 00	327 00	327 00	6,473 24
Coal.....	231 27	104 43	286 31	272 02	396 38	196 57	405 00	299 85	154 20	154 20	154 20	1,779 61
Provisions.....	202 60	94 62	256 90	238 84	566 39	218 00	111 86	379 71	349 93	349 93	349 93	2,523 98
Stores.....	30 48	222 23	34 92	.....	461 32	28 88	18 95	40 95	18 95	19 26	42 52	1,102 31
Equipment.....	.....	.....	12 24	.....	58 88	3 30	10 00	99 88	21 00	.....	21 00	380 99
Water.....	226 29	61 12	4,272 75	2,307 59	3,162 97	29 34	1,282 35	43 69	354 82	.....	354 82	90 14
Repairs.....	.....	.....	1,275 00	.....	12 55	650 00	270 00	958 54	13,005 06	.....	13,005 06	41 27
Pilotage.....	262 50	.....	.....	.....	848 00	1,100 00	28 72	1,390 00	20 00	20 00	55 36	5,795 50
Towage.....	11 01	.....	10 32	.....	14 93	25 02	15 92	10 01	16 94	6 96	16 94	105 44
Warfare.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	1,436 62	1,112 28	6,910 47	3,538 06	6,168 12	1,783 11	1,258 72	3,833 93	1,258 72	373 22	1,371 82	31,477 82
Working expenses.....	1,210 82	1,050 86	2,637 72	1,225 95	3,005 15	1,753 77	515 81	2,875 39	690 00	373 22	690 00	17,797 32
Repairs, ordinary.....	131 99	29 34	24 38	.....	3,162 97	29 34	958 54	.....	.....	.....	.....	5,565 91
" extraordinary.....	94 80	32 08	4,251 37	2,312 11	.....	.....	742 91	.....	.....	.....	.....	8,114 59
Totals.....	1,436 62	1,112 28	6,910 47	3,538 06	6,168 12	1,783 11	1,258 72	3,833 93	1,258 72	373 22	1,371 82	31,477 82

DREDGE 'NEW DOMINION.'

Wages.....	690 45	980 52	759 58	477 00	475 00	475 00	474 59	446 56	505 00	500 64	493 26	6,752 60
Coal.....	.....	36 80	43 07	272 76	198 26	5 00	.....	93 76	131 89	131 89	243 00	987 74
Provisions.....	40 34	41 64	28 27	273 45	94 53	99 75	2 10	226 78	306 03	25 68	.....	1,160 64
Stores.....	.....	75 00	133 50	44 87	10 71	56 13	.....	4 00	163 11	.....	.....	294 63
Equipment.....	.....	10 00	3 20	.....	.....	.....	.....	30 30	43 50	.....	.....	43 50
Water.....	685 66	25 00	586 40	582 50	14 60	.....	.....	40 58	83 16	.....	.....	2,032 43
Repairs.....	.....	219 00	330 00	780 00	756 00	810 00	.....	2,610 00	125 00	2,265 00	.....	25 00
Pilotage.....	.....	.....	9 24	12 94	2 32	.....	.....	.....	.....	.....	.....	9,236 00
Towage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8 14	8 85	48 04
Warfare.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	1,386 42	1,378 96	2,537 06	2,443 52	1,371 22	1,445 88	476 69	3,467 48	1,019 19	2,931 35	745 11	20,743 59
Working expenses.....	.....	1,096 19	1,671 08	1,861 02	1,331 69	1,445 88	476 69	3,426 90	936 03	2,931 35	745 11	17,448 05
Repairs, ordinary.....	.....	282 77	865 98	582 50	4 00	10 60	.....	12 68	1 00	.....	.....	17 68
" extraordinary.....	1,386 42	.....	.....	.....	39 53	.....	.....	27 90	82 16	.....	.....	3,277 86
Totals.....	1,386 42	1,378 96	2,537 06	2,443 52	1,371 22	1,445 88	476 69	3,467 48	1,019 19	2,931 35	745 11	20,743 59

9-10 EDWARD VII., A. 1910

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909.
DREDGE 'PRINCE EDWARD.'

Items.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	352 29	485 66	493 74	500 16	500 58	502 13	516 96	495 65	497 40	287 61	175 00	548 39	5,355 57
Coal.....			176 02	425 50	9 45	11 18	229 97						852 12
Provisions.....			248 75	160 65	106 56	134 25	29 60			507 29			1,487 16
Stores.....			84 77	28 78		170 46	61 16		485 88			106 33	937 38
Equipment.....									166 34				166 34
Water.....			89 59	45 60	46 00	45 00	5 00		46 10	7 60			284 80
Repairs.....			1,149 98		24 35	31 82	54 07				71 06	964 15	2,295 43
Towage.....	325 00	650 00	650 00	650 00	625 00	625 00	675 00		1,206 00	100 00			5,516 00
Contingencies.....			19 16			30 46				6 20		19 31	75 13
Totals.....	677 29	1,135 66	2,921 92	1,810 69	1,311 94	1,550 30	1,571 76	495 65	2,401 72	908 70	246 06	1,638 18	16,669 87
Working expenses.....	677 29	1,135 66	1,771 94	1,810 69	1,287 59	1,518 48	1,517 69	495 65	2,401 72	621 09	175 00	125 64	13,538 44
Repairs, ordinary.....	Nil.	Nil.	Nil.	Nil.	Nil.	26 58	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	26 58
" extraordinary.....	Nil.	Nil.	1,149 98	Nil.	24 35	5 24	54 07	Nil.	Nil.	287 61	71 06	1,512 54	3,164 85
Totals.....	677 29	1,135 66	2,921 92	1,810 69	1,311 94	1,550 30	1,571 76	495 65	2,401 72	908 70	246 06	1,638 18	16,669 87

SESSIONAL PAPER No. 19

DREDGE 'GEO. MCKENZIE.'

Wages.....	733 29	434 03	468 00	494 50	199 00	460 00	650 00	133 97	295 77	250 00	565 45	5,562 01
Coal.....	45 36	43 88	.....	310 50	375 50	256 50	.....	45 50	16 90	.....	41 00	1,135 14
Provisions.....	.....	.....	.....	450 93	33 27	100 08	58 16	157 94	98 14	.....	109 19	1,067 71
Stores.....	3 30	5 41	.....	.....	4 00	5 25	.....	.....	24 30	.....	.....	42 26
Equipment.....	.....	.....	55 71	.....	.....	.....	.....	33 00	.....	.....	.....	88 71
Water.....	.....	.....	4 80	3 50	135 11	13 00	12 00	7 50	.....	.....	.....	176 21
Repairs.....	127 17	.....	113 46	180 64	147 95	68 00	4 31	3 37	8 30	.....	31 76	684 96
Towage.....	.....	40 00	.....	.....	300 00	.....	.....	870 00	493 95	.....	.....	1,703 95
Contingencies.....	2 19	.....	6 68	.....	.....	41 04	2 35	7 02	.....	11 77	.....	71 05
Totals.....	911 31	523 32	648 65	1,440 07	1,615 13	943 87	536 82	1,558 30	937 36	261 77	745 40	10,572 00
Working expenses.....	50 85	523 32	535 19	1,259 43	1,467 18	875 87	532 51	1,551 93	633 29	261 77	150 19	8,294 53
Repairs, ordinary.....	137 17	Nil.	Nil.	8 70	53 95	68 00	4 31	3 37	Nil.	Nil.	Nil.	265 50
" extraordinary.....	733 29	Nil.	113 46	171 94	94 00	Nil.	Nil.	Nil.	304 07	Nil.	595 21	2,011 97
Totals.....	911 31	523 32	648 65	1,440 07	1,615 13	943 87	536 82	1,558 30	937 36	261 77	745 40	10,572 00

DREDGE 'CAPE BRETON.'

Wages.....	421 41	510 00	510 00	510 00	494 37	507 62	510 00	1,338 04	435 54	555 39	915 02	7,217 42
Coal.....	45 50	311 25	391 37	311 25	84 50	.....	224 25	452 58	259 64	148 65	21 25	1,577 62
Provisions.....	211 79	206 75	.....	289 77	289 77	110 20	48 45	415 55	65 37	451 53	169 83	2,300 61
Stores.....	159 22	.....	.....	.....	.....	.....	5 55	.....	.....	18 36	50 42	233 55
Equipment.....	406 75	.....	138 10	.....	.....	88 50	265 17	242 48	.....	.....	.....	1,141 00
Water.....	37 50	20 00	45 00	20 00	.....	13 25	.....	.....	10 50	.....	.....	126 25
Repairs.....	2,242 77	.....	209 72	.....	2 40	.....	2,416 59	1,321 60	641 01	.....	.....	6,837 09
Towage.....	60 00	1,560 00	3,000 00	1,560 00	1,560 00	1,410 00	357 82	3,764 00	1,301 54	.....	.....	13,013 36
Contingencies.....	73 42	10 04	14 37	10 04	6 73	8 60	11 56	14 72	27 11	.....	5 58	172 13
Totals.....	3,658 39	510 00	4,170 46	2,648 04	2,575 87	2,138 17	3,839 39	7,551 97	2,740 71	1,173 93	1,162 10	32,679 03
Working expenses.....	1,415 62	510 00	3,960 74	2,648 04	2,573 47	2,138 17	1,422 80	6,227 37	1,964 16	1,173 93	247 08	24,491 38
Repairs, ordinary.....	2,048 87	Nil.	Nil.	Nil.	2 40	Nil.	2,416 59	1,324 60	Nil.	Nil.	Nil.	5,792 46
" extraordinary.....	193 90	Nil.	209 72	Nil.	Nil.	Nil.	Nil.	Nil.	1,976 55	Nil.	915 02	2,395 19
Totals.....	3,658 39	510 00	4,170 46	2,648 04	2,475 87	2,138 17	3,839 39	7,551 97	2,740 71	1,173 93	1,162 10	32,679 03

9-10 EDWARD VII., A. 1910

CLASSIFICATION OF Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909—Continued.

DREDGE 'NEW BRUNSWICK.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	297 98	363 77	376 84	381 73	370 92	445 25	680 00	416 07	187 50	80 00	80 00	255 30	3,842 36
Coal.....	16 63	228 38	230 01	271 01	294 28	.....	216 29	.....	290 00	.....	.....	.....	1,300 05
Provisions.....	44 70	79 06	230 04	108 17	46 42	137 98	92 93	.....	89 17	.....	.....	28 05	828 45
Stores.....	.....	.....	97 37	.....	9 10	.....	.....	.....	.....	.....	.....	30 17	181 34
Equipment.....	.....	.....	93 39	58 54	.....	.....	.....	.....	.....	.....	.....	.....	151 84
Water.....	.....	.....	10 00	.....	.....	.....	.....	.....	.....	.....	.....	7 20	17 20
Repairs.....	38 70	.....	320 50	.....	67 26	.....	.....	.....	138 25	15 80	.....	237 43	877 94
Towage.....	166 00	540 00	553 25	590 00	520 00	493 44	993 09	.....	415 49	.....	.....	.....	4,201 27
Contingencies.....	9 47	.....	9 22	3 44	2 09	0 99	1 00	.....	3 58	.....	.....	6 56	36 55
Totals.....	483 48	1,211 21	1,690 52	1,345 98	1,242 81	1,144 92	1,983 31	410 07	1,123 99	95 80	80 00	624 71	11,436 80
Working expenses.....	444 78	1,211 21	1,370 02	1,345 98	1,242 81	1,077 66	1,983 31	410 07	985 74	Nil.	Nil.	209 48	10,281 06
Repairs, ordinary.....	4 60	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	46 75	Nil.	Nil.	78 92	136 27
" extraordinary.....	34 10	Nil.	320 50	Nil.	Nil.	67 26	Nil.	Nil.	91 50	95 80	80 00	336 31	1,025 47
Totals.....	483 48	1,211 21	1,690 52	1,345 98	1,242 81	1,144 92	1,983 31	410 07	1,123 99	95 80	80 00	624 71	11,436 80

SESSIONAL PAPER No. 19

DREDGE 'W. S. FIELDING.'

Wages.....	1,140 09	1,187 80	1,196 46	1,267 75	1,358 97	1,208 01	1,183 76	1,202 99	1,299 20	1,301 59	1,292 00	1,231 17	11,863 79
Coal.....	1,156 00	121 60	13 76	710 46	350 80	336 63	332 51	286 60	727 09	300 00	.....	1,141 00	5,892 45
Provisions.....	196 54	.....	149 22	1,129 09	278 87	343 73	376 15	3 60	584 20	11 26	538 12	410 19	4,050 97
Stores.....	48 00	.....	57 88	272 37	125 66	714 17	224 53	.....	100 87	74 81	.....	71 21	1,689 53
Equipment.....	260 23	.....	607 05	290 46	312 81	309 66	210 50	.....	5 40	.....	.....	500 24	2,426 38
Water.....	.....	.....	388 40	148 81	121 05	89 30	116 30	.....	214 80	409 30	77 43	1,159 41	1,490 96
Repairs.....	.....	.....	640 87	948 66	142 35	2,816 66	308 06	323 94	3,292 04	916 52	.....	2,925 00	10,670 91
Towage.....	130 00	.....	133 00	135 00	.....	130 00	135 00	.....	2,180 50	.....	.....	2,180 50	663 00
Wharfage.....	3 00	.....	.....	3,081 50	.....	11,218 50	2,028 00	.....	657 96	523 55	.....	2,180 50	21,436 50
Contingencies.....	6 05	79 35	10 00	649 39	67 81	1,981 88	332 49	.....	.....	.....	.....	210 87	4,423 45
Totals.....	2,809 91	1,821 75	3,196 64	8,646 61	2,819 35	19,160 79	5,357 30	1,817 13	8,971 36	3,582 23	1,907 55	7,685 98	67,806 60
Working expenses.....	2,809 91	1,821 75	2,555 77	7,607 95	2,707 00	16,314 13	4,939 24	1,623 19	5,769 32	2,620 71	1,830 12	5,354 57	56,093 65
Repairs, ordinary.....	Nil.	Nil.	336 07	87 29	51 78	581 87	223 99	Nil.	3,292 01	961 52	77 43	61 96	5,586 95
" extraordinary.....	Nil.	Nil.	304 80	861 37	90 57	2,231 79	174 07	193 94	Nil.	Nil.	Nil.	2,956 45	6,125 99
Totals.....	2,809 91	1,821 75	3,196 64	8,646 61	2,819 35	19,160 79	5,357 30	1,817 13	8,971 36	3,582 23	1,907 55	7,685 98	67,806 60

DREDGE 'MONTAGUE.'

Wages.....	581 85	500 00	510 00	505 00	505 00	505 06	505 00	505 00	436 20	238 51	235 31	548 75	5,575 62
Coal.....	258 75	31 64	180 00	206 78	10 00	722 10	210 38	210 38	262 81	.....	.....	190 21	1,116 12
Provisions.....	168 02	19 00	99 03	43 52	.....	295 92	66 21	.....	10 64	.....	43 32	133 91	1,570 56
Stores.....	121 02	.....	102 02	74 93	.....	.....	.....	.....	.....	132 47	.....	92 16	718 69
Equipment.....	16 00	30 40	24 00	13 50	119 50	71 00	1,159 29	.....	17 60	.....	.....	22 50	828 95
Water.....	430 51	.....	42 38	375 76	229 94	2,823 72	1,159 29	.....	46 00	22 56	.....	1,065 55	190 30
Repairs.....	.....	625 00	812 50	650 00	850 00	627 00	675 00	.....	1,147 38	200 00	.....	1,049 71	6,149 71
Towage.....	325 00	.....	.....	.....	.....	.....	.....	.....	88 75	.....	.....	.....	104 00
Wharfage.....	70 53	.....	.....	.....	.....	116 99	0 45	.....	53 80	.....	.....	.....	6,211 88
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62 01	88 75
Totals.....	1,715 93	1,464 79	2,333 41	1,968 29	1,714 41	5,219 73	2,616 33	505 00	2,363 18	593 54	278 63	2,115 09	22,888 36
Working expenses.....	703 57	1,461 79	2,291 03	1,592 63	1,484 50	2,396 01	1,457 04	505 00	2,363 18	570 98	278 63	108 63	15,515 89
Repairs, ordinary.....	430 51	Nil.	42 38	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	22 56	Nil.	919 08	1,114 53
" extraordinary.....	581 85	Nil.	Nil.	375 76	229 94	2,823 72	1,159 29	Nil.	Nil.	Nil.	Nil.	787 38	5,957 91
Totals.....	1,715 93	1,464 79	2,333 41	1,968 29	1,714 44	5,219 73	2,616 33	505 00	2,363 18	593 54	278 63	2,115 09	22,888 36

9-10 EDWARD VII., A. 1910

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909.—Continued.

DREDGE 'NORTHUMBERLAND.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	942 87	840 00	840 00	840 00	838 60	840 00	840 00	866 00	706 69	378 52	420 00	420 00	8,772 68
Coal.....				1,443 25	744 50				1,416 62	86 50			4,893 51
Provisions.....		33 46	435 07	329 42	911 47	377 92	231 31		468 78	78 80			2,866 23
Stores.....	92 18	25 99	10 53	214 73	409 96	150 69			72 15	15 72		19 06	1,011 01
Equipment.....					146 79		60 35		10 00				217 14
Water.....					25 00	25 00			25 00	25 00			100 00
Repairs.....	37 50	25 55	561 78	594 46	498 78		71 21		772 62	62 76	81 56	697 54	3,403 76
Towage.....			23 00	23 00	1,555 00	1,836 00			410 00	15 90			3,839 00
Wharfage.....			80 00	80 00	30 00				15 00				125 00
Contingencies.....		52 67	33 77	33 77	78 69	15 91	3 88		3 46		49 03	62 00	300 91
Totals.....	1,072 55	977 67	3,051 52	3,558 63	5,238 79	3,245 52	1,206 75	866 00	3,900 32	662 30	550 59	1,198 60	25,529 24
Working expenses....	829 92	952 12	2,489 74	2,464 17	4,740 01	3,245 52	1,135 54	866 00	3,127 70	221 02	469 03	Nil	21,040 77
Repairs, ordinary....	Nil	25 55	34 61	Nil	419 92	Nil	71 21	Nil	772 62	62 76	81 56	Nil	1,465 23
" extraordinary.....	242 63	Nil	527 17	594 46	78 86	Nil	Nil	Nil	Nil	378 52	Nil	1,198 60	3,020 24
Totals.....	1,072 55	977 67	3,051 52	3,558 63	5,238 79	3,245 52	1,206 75	866 00	3,900 32	662 30	550 59	1,198 60	25,529 24

SESSIONAL PAPER No. 19

TUG 'HELENA.'

Wages.....	435 00	470 00	470 00	465 00	493 41	549 26	550 00	513 32	559 96	555 00	573 08	555 57	6,189 60
Coal.....	.....	858 57	373 80	835 28	744 18	835 28	744 18	328 13	439 00	439 00	.....	475 69	3,698 96
Provisions.....	.....	12 34	0 00	352 82	286 48	439 61	439 61	271 42	67 29	67 29	.....	739 29	2,325 10
Stores.....	.....	31 90	130 48	14 69	.....	.....	.....	.....	.....	.....	.....	.....	1,955 07
Equipment.....	.....	481 91	9 10	.....	29 70	47 10	.....	.....	.....	.....	120 25	.....	567 81
Water.....	.....	.....	65 00	10 00	24 40	1 45	10 00	10 00	.....	59 97	.....	.....	231 10
Repairs.....	62 47	2 00	429 69	.....	103 75	15 79	120 62	120 62	.....	15 00	.....	.....	1,777 50
Towage.....	.....	.....	50 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	56 00
Wharfage.....	.....	42 74	.....	0 58	15 35	.....	.....	11 69	.....	0 83	.....	.....	71 19
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	497 17	1,049 89	2,766 20	864 67	1,854 71	1,644 26	550 00	1,694 79	559 96	1,161 29	693 33	5,751 06	19,081 33
Working expenses.....	435 00	1,038 89	2,336 51	864 67	1,750 96	1,628 47	550 00	1,574 17	559 96	1,101 32	693 33	1,109 78	13,643 06
Repairs, ordinary.....	Nil.	2 00	15 65	Nil.	89 75	15 79	Nil.	120 62	Nil.	59 97	Nil.	Nil.	303 78
" extraordinary.....	62 47	Nil.	414 01	Nil.	14 00	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	4,694 28	5,134 49
Totals.....	497 17	1,040 89	2,766 20	864 67	1,854 71	1,614 26	550 00	1,694 79	559 96	1,161 29	693 33	5,751 06	19,081 33

TUG 'RONA.'

Wages.....	161 16	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	225 00	2,636 16
Coal.....	47 13	29 25	6 83	67 84	103 15	80 67	159 59	159 59	76 38	241 67	241 67	.....	992 70
Provisions.....	.....	.....	266 02	14 97	43 80	.....	.....	.....	.....	.....	.....	.....	215 49
Stores.....	98 52	.....	91 83	.....	201 30	.....	.....	.....	.....	.....	.....	.....	142 85
Equipment.....	62 52	26 41	.....	6 00	.....	.....	.....	.....	.....	30 60	30 60	.....	676 54
Repairs.....	.....	.....	.....	2 84	.....	.....	.....	.....	.....	.....	.....	.....	6 00
Towage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38 29
Contingencies.....	6 38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	365 71	280 66	634 65	302 28	573 85	312 47	225 00	225 00	674 77	255 60	313 22	634 41	4,797 62
Working expenses.....	313 19	251 25	634 65	302 28	371 95	312 47	225 00	225 00	468 80	Nil.	313 22	250 27	3,671 08
Repairs, ordinary.....	52 52	26 41	Nil.	Nil.	45 00	Nil.	Nil.	Nil.	205 97	Nil.	Nil.	143 39	173 29
" extraordinary.....	Nil.	Nil.	Nil.	Nil.	156 90	Nil.	Nil.	Nil.	Nil.	255 60	Nil.	210 75	633 25
Totals.....	365 71	280 66	634 65	302 28	573 85	312 47	225 00	225 00	674 77	255 60	313 22	634 41	4,797 62

CLASSIFICATION OF Disbursements of the Dredges in the Maritime Provinces during the Year ending March 31, 1909—Continued.

TUG 'HERCULES.'

ITEMS.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....				136 52	405 60	473 79	290 00	290 00	290 00	290 00	290 00	353 50	2,819 41
Coal.....				521 60			329 30					277 20	1,128 10
Provisions.....				65 83	4 53	10 60	130 17		179 30		73 61	156 78	620 82
Stores.....				181 79	89 50	91 26	2 75		155 65	18 08	10 65	1 55	551 23
Equipment.....				343 22	293 35	48 74						127 42	892 73
Water.....					35 39	21 69	39 00		70 20			79 05	245 24
Repairs.....				224 01	89 01	118 43		18 38	214 97	55 56		146 81	867 17
Towage.....					7 00		8 00					5 00	13 00
Wharfage.....					3 34				10 65				17 66
Contingencies.....													3 34
Totals.....	Nil.	Nil.	Nil.	1,462 97	927 72	764 42	799 22	308 38	920 78	363 64	374 26	1,147 31	7,008 70
Working expenses.....				1,112 44	428 36	460 99	799 22	200 00	705 81	308 08	374 26	710 50	5,189 66
Repairs, ordinary.....				Nil.	Nil.	19 58	Nil.	Nil.	214 97	55 56	Nil.	7 47	297 58
" extraordinary.....				350 53	499 36	283 85	Nil.	18 38	Nil.	Nil.	Nil.	429 34	1,581 46
Totals.....	Nil.	Nil.	Nil.	1,462 97	927 72	764 42	799 22	308 38	920 78	363 64	374 26	1,147 31	7,008 70

9-10 EDWARD VII., A. 1910

CLASSIFICATION AND QUANTITIES OF Material Removed by Dredges in the Maritime Provinces, &c.—Continued.

DREDGE 'NEW DOMINION.'

Description of Material Dredged.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Edgings, saw-dust and gravel.....								2,910					2,910
Edgings, saw-dust and sand.....						3,300	4,840	1,670	2,055				9,810
Clay and gravel.....		700		450									3,205
Clay, stone and gravel.....			10,725	4,150	4,225	2,850							19,100
Sand—ordinary.....										3,800	3,000	8,500	2,850
Sand and shells.....					2,400								15,300
Mud.....								745	3,460				6,545
Totals.....		700	10,725	4,600	6,625	6,150	4,840	5,325	5,455	3,800	3,000	8,500	59,720

DREDGE 'PRINCE EDWARD.'

Gravel, sand and rock.....						1,575	1,125	1,845					1,575
Clay.....						45							2,970
Clay, stone and rocks.....				7,020	1,710	900							45
Sand—ordinary.....		855	630	540	6,075	4,635		315					11,115
Sand and mud.....		4,455	1,440				2,430	270	1,012				20,835
Mud.....													5,152
Totals.....		5,310	6,885	7,560	7,785	7,155	3,555	2,430	1,012				41,692

9-10 EDWARD VII., A. 1910

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES IN THE MARITIME PROVINCES, &c.—Continued.

“W. S. FIELDING.”

Description of Material Dredged.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Stones and sand.....							2,250						2,250
Gravel and mud.....		30,220	16,000	17,500	30,700	43,150					6,150		143,720
Clay and stones.....	6,950						10,000	10,400		10,500		7,800	52,250
Stone, mud and gravel.....						7,400							
Sand and ordinary mud.....	16,300		4,500	39,450	21,700								39,275
Sand—very fine.....			9,800	2,250									81,950
Mud.....		1,700		9,800			1,000	5,550	1,000				12,050
													19,050
Totals.....	23,250	31,920	30,300	69,000	52,400	50,550	27,100	15,350	10,175	20,700	10,650	8,550	350,545

“MONTAGUE.”

Rubbish and logs.....			1,100				100						1,200
Boulders, rock and sand.....		1,550											1,550
Mud and stone.....		900	7,000	2,800	2,150	500	1,200	2,100					15,750
Clay, stone and rock.....		600		4,200				200					5,300
Clay, stone and mud.....					900								1,500
Sand—ordinary and mud.....		1,900		300		1,000			300				3,500
Sand—very fine.....				2,500					550				3,650
Mud.....			5,300	2,000	8,350	8,950		450					25,050
Totals.....		4,950	13,400	11,800	11,400	10,450	1,900	2,750	850				57,500

SESSIONAL PAPER No. 19

"NORTHUMBERLAND."

[illegible]

9-10 EDWARD VII., A. 1910

DETAILS OF DREDGING IN THE MARITIME PROVINCES.
During the Fiscal Year ending 31st March, 1909.

Dredge.	Locality.	Date.	Time Dredging.	Quantity. C. Yds.	Expendi- ture at Locality.	Per Cubic Yard for Local Expendi- ture.	Wintering and Re- equipping —pro rata.	Total Cost.	Per Cubic Yard for Total Expendi- ture.
			Hrs. Min.		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
St. Lawrence	Pictou Bar, Pictou Co., N.S.	April 28 to May 20, 1908.....	53 10	7,560	2,070 14	0 27 38	1,633 21	3,703 35	0 48 98
"	Mission Point, Bonaventure Co., P.Q.	June 1 to 19 and July 15 to 28, 1908.....	56 50	9,450	2,532 24	0 26 79	1,997 70	4,529 94	0 47 93
"	Bar between Mission Point and Campbellton, N.B.	June 29 to July 14, 1908.....	56 20	7,770	7,803 24	0 23 20	1,422 56	3,225 80	0 41 52
"	Oak Bay, Restigouche Co., N.B.	July 29 to Aug. 8, 1908.....	44 25	7,770	962 28	0 12 25	751 24	1,703 52	0 21 92
"	Traverse, "	Aug. 9 to Sept. 30, 1908.....	123 20	24,290	4,025 14	0 16 57	3,176 23	7,201 37	0 29 66
"	Hillyard Wharf, Dalhousie Co., N.B.	Oct. 1 to Nov. 9, 1908.....	76 55	15,400	1,994 94	0 12 95	1,573 78	3,568 72	0 23 17
Canada	Marine Slip, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908.....	18 20	1,790	345 30	0 20 32	706 72	1,052 11	0 70 12
"	Yarmouth, Yarmouth Co., N.S.	April 26 to June 30 and July 24 to 31, 1908.....	295 18	34,735	3,960 48	0 11 40	8,100 73	12,061 21	0 34 74
New Dominion	St. Andrews, New Wharf, Charlotte Co., N.B.	May 21 to Aug. 24, 1908.....	638 00	20,250	4,680 18	0 23 11	1,273 85	5,954 63	0 24 46
"	St. Andrews Basin, East Entrance, Charlotte Co., N.B.	Aug. 25 to Sept. 9 and Jan. 8 to Mar. 31, 1909.....	282 45	20,550	5,549 98	0 27 00	1,510 55	7,060 53	0 34 35
"	St. George, Charlotte Co., N.B.	Sept. 10 to Nov. 24, 1908.....	397 23	12,720	4,396 70	0 34 56	1,197 27	5,593 97	0 43 98
"	L'Écluse, "	Nov. 27 to 30 and Dec. 1 to 15, 1908.....	53 15	4,145	933 26	0 22 51	254 01	1,187 27	0 28 61
Prince Edward	Black Harbour, "	Dec. 16 to 28, 1908.....	39 00	2,055	845 59	0 41 14	229 53	1,075 12	0 52 31
"	Victoria, Crapaud, Queens Co., P.E.I.	May 1 to Dec. 28, 1908.....	787 46	34,695	7,181 59	0 20 70	5,914 92	13,096 51	0 37 87
"	Pownal, Queens Co., P.E.I.	Sept. 29 to Nov. 23, 1908.....	171 40	5,985	2,015 53	0 33 67	1,660 15	3,675 68	0 61 23
Geo. McKenzie	Port Mulgrave, Guysboro Co., N.S.	April 30 to May 11, 1908.....	7 30	3,735	371 30	0 09 94	445 34	816 64	0 21 87
"	Sherbrooke, "	May 12 to July 31, 1908.....	420 32	15,925	2,564 50	0 16 10	3,075 72	5,640 22	0 35 48
Cape Breton	Battery Shoal, Cape Breton Co., N.S.	May 18 to 21, 23, 26, 27 and 30 and June 1 to 15, and 2 to 26 and 29 and July 1 to 4, 8, 22, 23, 30 and 31, 1908.....	161 15	13,545	4,675 00	0 34 51	2,395 86	7,070 86	0 52 59
"	Lewis Wharf and Shoal Outside, Cape Breton Co., N.S.	May 19, June 27 to 30 and July 9, 10, 13 to 18, 20, 21 and 29, 1908.....	80 30	11,130	2,596 51	0 23 32	1,330 44	3,926 95	0 35 29

SESSIONAL PAPER No. 19

"	Dominion Coal Co., Wharf, Cape Breton Co., N.S.	May 22, 1908.	6 00	210	93 52	0 41 53	48 01	141 53	0 07 39
New Brunswick	Long Island, Kennebecasis River, Kings Co., N.B.	April 15 to May 23 and June 18 to 22 and Nov. 14 to 18, 1908.	320 00	5,380	1,577 07	0 29 31	464 50	2,041 57	0 37 95
"	Flewellings Wharf, Kennebecasis River, Kings Co., N.B.	May 23 to June 2, 1908.	53 00	1,400	319 14	0 22 80	91 01	413 15	0 29 51
"	Reids Point Wharf, Kennebecasis River, Kings Co., N.B.	June 3 to 9 and Nov. 10 to 13, 1908.	78 00	980	351 92	0 35 90	103 64	455 56	0 46 48
"	Clifton Wharf, Kennebecasis River, Kings Co., N.B.	June 10 to 13, 1908.	21 00	620	157 46	0 25 40	46 60	204 06	0 32 91
"	Moss Glen Wharf, Kennebecasis River, Kings Co., N.B.	June 15 to 17, 1908.	25 00	770	129 77	0 16 85	38 12	167 89	0 21 06
"	Whithead Wharf, Kennebecasis River, Kings Co., N.B.	June 23 to 30, 1908.	68 30	2,500	316 35	0 12 41	91 41	401 78	0 16 07
"	Murphy Wharf, Perry Point, Kennebecasis River, Kings Co., N.B.	July 1 to 9 and Nov. 5 to 7, 1908.	119 00	9,050	733 86	0 08 10	216 16	950 02	0 10 50
"	Sedys Sual, Kennebecasis River, Kings Co., N.B.	July 20 to Oct. 15, 1908.	655 30	31,615	3,763 62	0 10 87	1,108 58	4,872 18	0 11 20
"	Hampton, Kennebecasis River, Kings Co., N.B.	Oct. 16 to Nov. 4, 1908.	123 00	6,020	1,528 05	0 25 38	450 07	1,978 12	0 32 86
"	Rothsaw, Kennebecasis River, Kings Co., N.B.	Nov. 19 to 20, 1908.	13 00	130	17 52	0 13 47	5 14	22 66	0 17 43
W. S. Fielding	Harbour Channel, St. John, St. John Co., N.B.	April 1 to Oct. 29 and Nov. 7 to 25 and Dec. 19 to Mar. 16, 1909.	689 37	336,870	58,140 30	0 17 26	13,403 51	71,513 84	0 21 21
"	Winter Port Berths, St. John, St. John Co., N.B.	Oct. 30 to Nov. 6 and Nov. 27 to Nov. 30 and Dec. 1 to 17, 1908.	50 35	13,075	3,080 78	0 22 53	710 25	3,791 03	0 28 17
Montague	Souris, Kings Co., P.E.I.	May 6 to 25 and Nov. 21 to 30, 1908.	113 00	5,350	1,231 26	0 23 07	2,211 22	3,145 48	0 64 40
"	McPhersons Cove, Grand River, P.E.I.	May 26 to June 11 and July 10 to 14, 1908.	140 30	7,700	1,443 40	0 18 71	2,585 90	1,029 30	0 52 33
"	Public Wharf, Annandale, P.E.I.	June 12 to July 9, 1908.	143 30	11,800	1,364 82	0 11 56	2,144 65	3,809 47	0 32 98
"	Murray River, Kings Co., "	July 15 to Sept. 25, 1908.	398 30	27,550	3,193 07	0 12 07	6,257 96	9,751 03	0 35 39
"	Murray Harbour, South, "	Oct. 15 to Nov. 23, 1908.	95 00	4,650	713 96	0 15 36	1,279 57	1,993 53	0 42 87
Northumberland	La Have River, Lamenburg Co., N.S.	April 6 to May 4, 1908.	257 00	128,086	3,287 66	0 02 56	1,120 07	4,407 73	0 03 43
"	Liverpool, Queens Co., N.S.	May 15 to July 31, 1908.	245 00	57,813	8,425 91	0 14 58	2,870 62	11,296 53	0 19 54
			7,400 16	898,579	113,660 45	0 15 99	73,699 81	217,800 26	0 21 25

Guysboro.	5,400	1,413 53	.....	.....	5,400	1,413 53
Guysboro.	47,655	16,519 85	.....	.....	47,655	16,519 85
Larrys River.	11,389	6,400 07	.....	.....	11,389	6,400 07
Port Mulgrave.	1,260	496 49	.....	.....	1,260	496 49
Sherbrooke.	16,815	7,336 29	.....	.....	16,815	7,336 29
Cookes Cove.	81,812	22,352 04	.....	.....	81,812	22,352 04
St. Marys River.	3,015	4,477 97	.....	.....	3,015	4,477 97
Puckle Passage, Little Canoe.	5,628	2,204 33	61,200 57	6,456 86	5,628	2,204 33
Bar Sonora, St. Marys River.	3,920	2,593 71	.....	.....	3,920	2,593 71
Chezzetcook.	6,177	2,063 38	.....	.....	6,177	2,063 38
Halifax Ferry.	26,101	12,049 68	.....	.....	26,101	12,049 68
Herring Cove.	4,227	1,690 53	.....	.....	4,227	1,690 53
Ketch Harbour.	792	182 53	.....	.....	792	182 53
Richmond Wharf.	1,750	620 28	.....	.....	1,750	620 28
Roche's Wharf.	35,565	11,056 79	.....	.....	35,565	11,056 79
Halifax Railway Terminus.	21,515	4,958 56	.....	.....	21,515	4,958 56
Bedford.	7,350	2,970 39	.....	.....	7,350	2,970 39
North West Arm.	1,400	530 04	.....	.....	1,400	530 04
Conards Wharf.	14,288	5,962 93	.....	.....	14,288	5,962 93
Salmon River.	10,665	3,075 72	.....	.....	10,665	3,075 72
Shry Bay.	2,070	596 97	.....	.....	2,070	596 97
Eastern Passage.	4,815	1,388 61	49,740 12	.....	4,815	1,388 61
Simbro.	19,760	3,491 31	.....	.....	19,760	3,491 31
Whycomeagh.	4,940	872 83	.....	.....	4,940	872 83
Campbells Pond.	270	190 37	.....	.....	270	190 37
Port Hastings.	296,275	71,409 02	.....	.....	296,275	71,409 02
Cheticamp.	326,800	82,124 26	.....	.....	326,800	82,124 26
Malton.	15,275	10,796 14	.....	.....	15,275	10,796 14
Port Hood.	10,980	3,431 25	.....	.....	10,980	3,431 25
Grand Etang.	70,510	22,194 57	172,315 18	.....	70,510	22,194 57
Lunenburg.	58,019	15,089 29	.....	.....	58,019	15,089 29
Malton Bay.	11,600	5,075 53	.....	.....	11,600	5,075 53
Voglers Cove.	17,825 59	60,184 98	.....	.....	17,825 59	60,184 98
LaHave River.	327,296	7,736 27	.....	.....	327,296	7,736 27
Acadia Coal Co.'s Wharf.	25,575	2,181 25	.....	.....	25,575	2,181 25
Albion Mines.	9,475	47,696 43	.....	.....	9,475	47,696 43
East River.	141,407	359 90	.....	.....	141,407	359 90
Halifax Coal Co.'s Wharf.	114,600	27,368 22	.....	.....	114,600	27,368 22
Pictou, Public Market Wharf.	92,649	24,673 79	.....	.....	92,649	24,673 79
" Railway Wharf.	48,645	8,808 40	.....	.....	48,645	8,808 40
" Landing Ry. Whf.	720	246 18	.....	.....	720	246 18
" Steam Ferry Slip.	316,700	49,100 68	.....	.....	316,700	49,100 68
" Bar.	6,080	1,204 29	.....	.....	6,080	1,204 29
" Hogg, Craig & Co.'s Wharf.	1,050	211 19	.....	.....	1,050	211 19
" Burnau & Morrell.	5,250	347 29	.....	.....	5,250	347 29
" Magdalen Islands (Cold Storage).	3,780	899 65	.....	.....	3,780	899 65
" Copter & Smelting Co.'s Wharfs.	1,395	682 15	.....	.....	1,395	682 15
Vale Colliery.	19,740 12	.....	.....	.....	19,740 12	.....
Inverness.	172,315 18	.....	.....	.....	172,315 18	.....
Lunenburg.	64,592 71	.....	.....	.....	64,592 71	.....
Pictou.	67,657 43	.....	.....	.....	67,657 43	.....

9-10 EDWARD VII., A. 1910

EXPENDITURE for Dredging in Nova Scotia for the Thirty-six Years and Four Months ended July 31, 1908—*Concluded.*

County.	Locality.	TOTAL FOR THE THIRTY-SIX YEARS ENDED MARCH 31, 1908.				FOR THE FOUR MONTHS ENDED JULY 31, 1908.				Total Quantity.	Total cost. \$ cts.	Cost for each County.
		Quantity.	Cost.	Cost for County.	\$ cts.	Quantity.	Cost.	Cost for County.	\$ cts.			
Pictou (Con.)	River John.....	85,173	22,243 98						85,173	22,243 98		
	Granton.....	25,110	10,707 53						25,110	10,707 53		
	New Glasgow.....	40,215	14,962 19						40,215	14,962 19		
	Middle River.....	15,060	4,984 40						15,060	4,984 40		
	C. Dwyers Wharf.....	5,400	1,087 66						5,400	1,087 66		
	" Berths for S.S. 'Campania'.....	5,850	2,000 22						5,850	2,000 22		
	Dwyer & Co.'s Wharf.....	360	123 09						360	123 09		
	Intercolonial Coal Mining Co., East River.....	46,900	7,410 86	233,125 08								
	Liverpool.....	82,230	31,944 16									
	Port Mouton.....	10,620	2,283 77	34,227 87								
Queens.....	D'Esconce.....	23,650	10,052 76						23,650	10,052 76		
	St. Peters Canal.....	90,830	27,435 95						90,830	27,435 95		
Richmond	St. Peters.....	7,150	2,407 11						7,150	2,407 11		
	Grand Goulet.....	23,584	5,570 49						23,584	5,570 49		
	River Bourgeois.....	18,920	4,468 87						18,920	4,468 87		
	Marine Slip.....	320	56 53						320	56 53		
Shelburne	Poulet.....	10,080	2,566 14						10,080	2,566 14		
	Fourelu Harbour.....	16,885	9,451 94						16,885	9,451 94		
	North Pond, Red Islands.....	21,900	12,203 23	74,216 32					21,900	12,203 23		
	Lockeport.....	91,168	22,049 58						91,168	22,049 58		
	Barrington Passage.....	42,670	13,607 03						42,670	13,607 03		
	Osburne.....	900	145 31						900	145 31		
Shelburne	Woods Harbour.....	1,170	245 45						1,170	245 45		
	Barrington Pub. Wharf, Sher- rows Channel.....	61,020	17,612 09						61,020	17,612 09		
	Shelburne.....	9,120	3,936 95	57,616 41					9,120	3,936 95		
Yarmouth	Yarmouth.....	658,117	162,506 67						691,552	175,709 99		
	Milton.....	663	499 46	163,096 13					663	499 46		
Hants	Windsor.....	23,740	16,914 64						23,740	16,914 64		
	Asprey Bay.....	3,820	1,569 95	1,569 95					3,820	1,569 95		
Victoria	Dredge • Cape Breton • losses.....	.....	762 98	762 98					.....	762 98		
		4,383,577	1,174,855 95	1,174,855 95					4,658,016	1,224,973 08		

SESSIONAL PAPER No. 19

EXPENDITURE for Dredging in New Brunswick for the Thirty seventh Year ended March 31, 1909.

County.	Locality	FOR THE THIRTY-SIXTH YEAR ENDED MARCH 31, 1908.				FOR THE YEAR 1908-09.				Total Quantity.	Total Cost.	Cost for each County
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.					
								Cubic yards.	\$		cts.	\$
Charlotte.	St. Andrews	111,270	24,432 50						111,270	24,432 50		
	" New Wharf.	18,387	5,149 70						38,657	11,103 73		
	St. Andrews Basin, East En- drace				20,250	5,951 03						
	St. George.				20,550	7,050 53						
Gloucester.	LeFevre.				12,720	5,593 97			12,720	5,593 97		
	Black Harbour.				4,145	1,187 27			4,145	1,187 27		
	Bathurst.				2,055	1,075 12			2,055	1,075 12		
	Carriquet.	98,637	29,095 79		29,582 20				98,637	29,095 79		
Kent.	Shippagan.	16,485	6,312 23						16,485	6,312 23		
	Richibucto.	88,954	33,180 54	68,788 56					88,954	33,180 54		
	Cocagne	172,778	53,514 01						172,778	53,514 01		
	Buctouche	27,180	9,601 45						27,180	9,601 45		
Kings.	" Priests Point	13,005	4,934 24						13,005	4,934 24		
	" Chapel	3,510	1,110 70						3,510	1,110 70		
	" Robertsons Wharf	4,140	1,310 07						4,140	1,310 07		
	Belleisle	45	14 23	70,514 70					45	14 23	70,514 70	
Kings.	Kennebecasis River.	147,655	21,401 67						147,655	21,401 67		
	Moss Glen	116,270	20,081 83						116,270	20,081 83		
	Westfield.	10,200	1,924 47		770	167 89			10,200	2,092 36		
	Glenwood Wharf.	1,300	362 19						1,300	362 19		
Kings.	Shampers Wharf	28,600	2,417 77						28,600	2,417 77		
	Jenkins Cove.	4,700	703 07						4,700	703 07		
	Cedars.	13,650	1,720 64						13,650	1,720 64		
	Evandale	19,700	1,948 64						19,700	1,948 64		
Kings.	Oak Point.	75	67 18						75	67 18		
	Victoria Wharf.	12,100	1,979 05						12,100	1,979 05		
	Long Island.	21,700	2,418 40						21,700	2,418 40		
	Flowing Wharf.				5,380	2,041 57			5,380	2,041 57		
Kings.	Reds Point Wharf.				1,400	415 15			1,400	415 15		
	Clifton Wharf.				980	455 56			980	455 56		
	Whitehead Wharf.				620	204 06			620	204 06		
	Murphy Wharf, Perry Point.				2,500	401 78			2,500	401 78		
Kings.	Sealys Shoal.				9,050	950 02			9,050	950 02		
	Hampton.				34,615	4,872 18			34,615	4,872 18		
	Rothsay.				6,020	1,978 12			6,020	1,978 12		
					130	22 65			130	22 65		
						55,654 91					66,561 90	
											11,506 99	

9-10 EDWARD VII., A. 1910

EXPENDITURE for Dredging in New Brunswick for the Thirty-seventh Year ended March 31, 1909—*Concluded.*

County.	Locality.	FOR THE THIRTY-SIXTH YEAR ENDED MARCH 31, 1908.				FOR THE YEAR 1908-9.				Total Quantity.	Total Cost.		Cost for each County
		Quantity.	Cost.		Quantity.	Cost.		Cost for County.					
				\$ cts.			\$ cts.		\$		cts.		
Northumberland	Horse Shoe, Miramichi.....	208,892	55,658 36						208,892	55,658 36			
	Outer Bar ".....	29,935	7,965 31						29,935	7,965 31			
	Grand Dune ".....	37,975	10,121 67						37,975	10,121 67			
	Gordon Flats ".....	22,425	4,403 95						22,425	4,403 95			
	Negnac.....	6,300	6,969 76						6,300	6,969 76			
	Loggieville.....	13,201	4,888 04	89,407 09					13,201	4,888 04	89,407 09		
	Grand Lake.....	215,232	30,085 41						215,232	30,085 41			
	" McNairs Cove.....	20,440	4,522 82						20,440	4,522 82			
	Jenseng.....	87,230	17,190 06						87,230	17,190 06			
	Washedemoak.....	65,675	8,073 65						65,675	8,073 65			
	" Cambridge Whf.....	2,900	1,073 31						2,900	1,073 31			
Queens..	" Ackerleys ".....	4,840	995 20						4,840	995 20			
	" Huestis ".....	270	212 72						270	212 72			
	" Websters ".....	5,000	764 58						5,000	764 58			
	" Robertsons ".....	5,750	422 14						5,750	422 14			
	" Colwells Creek.....	8,290	2,557 52						8,290	2,557 52			
	Grimross, Mid. Ground.....	12,040	3,274 99						12,040	3,274 99			
	Gagetown Creek Canal.....	45,935	7,739 97						45,935	7,739 97			
	Spoon Island.....	9,315	1,192 36						9,315	1,192 36			
	Ward's Shoal, Salmon River.....	46,625	4,993 59						46,625	4,993 59			
	Curley Shoal.....	36,625	3,369 16						36,625	3,369 16			
	Restigouche...	Chipman & Briggs Corner.....	104,275	12,269 49						104,275	12,269 49		
Upper Gagetown Wharf.....		1,700	1,104 90						1,700	1,104 90			
McChure Shoal.....		39,525	4,556 66						39,525	4,556 66			
Queens Coal Co., Newcastle.....		14,475	1,335 06						14,475	1,335 06			
" ".....		1,200	401 36						1,200	401 36			
Hampstead.....		1,865	609 25	106,344 20					1,865	609 25	106,344 20		
Belyas Wharf.....		22,301	6,513 08						22,301	6,513 08			
Dalhousie.....		13,336	1,825 67						13,336	1,825 67			
" McManus Contract.....		8,460	1,263 48						8,460	1,263 48			
" Railway Wharf.....		12,992	3,632 33						12,992	3,632 33			
" Ferry Landing.....		3,850	1,277 78						3,850	1,277 78			
" Bilyards.....		118,860	22,980 63			15,400		3,568 72	13,250	4,846 59			
Traverse.....	2,100	1,020 58			24,290		7,291 37	143,150	30,182 00				
Campbellton, Gov't. Wharf.	" ".....	31,500	10,795 74			7,770		1,703 52	9,870	2,724 10			
	" ".....								31,500	10,795 74			

EXPENDITURE for Dredging in Prince Edward Island for the Thirty-seventh Year ended March 31, 1909.

County.	Locality.	TOTAL FOR THE THIRTY-SIX YEARS ENDED MARCH 31, 1908.				FOR THE YEAR, 1908-1909.				Total Quantity.	Total Cost.	Cost for each County
		Quantity.	Cost.		Quantity.	Cost.		Cost for County.				
			\$	cts.		\$	cts.					
Kings	Grand River	Cubic yards.	76,176	15,304	04	7,700	4,029	30	83,870	15,304	04	
	Montague River	182,295	36,547	47	.....	.....	.....	.....	182,295	36,547	47	
	Murray Harbour South	101,253	18,147	03	.....	.....	.....	.....	105,903	20,140	56	
	Sturgeon	16,026	6,066	27	.....	.....	.....	.....	16,026	6,066	27	
	St. Marys Wharf	21,963	4,752	55	.....	.....	.....	.....	21,962	4,752	55	
	Georgetown Railway Wharf	1,002	408	32	.....	.....	.....	.....	1,002	408	32	
	" Queens Wharf	2,205	1,328	80	.....	.....	.....	.....	2,205	1,328	80	
	Cardigan Bridge	35,955	8,619	36	.....	.....	.....	.....	35,955	8,619	36	
	Newport	8,240	917	82	.....	.....	.....	.....	8,240	917	82	
	Souris	54,575	17,345	68	.....	.....	.....	.....	59,925	20,791	16	
	Murray River	43,447	11,985	49	.....	.....	.....	.....	70,997	21,736	52	
	Murray Railway	5,926	1,860	30	.....	.....	.....	.....	5,926	1,860	30	
	Morrell	43,335	11,972	59	.....	.....	.....	.....	43,335	11,972	59	
Queens	Annandale Public Wharf .....	.....	.....	.....	11,800	3,809	47	23,028	11,800	3,809	47	
	Charlottetown Ry. Wharf	125,391	33,956	60	.....	.....	.....	.....	125,391	33,956	60	
	" Pownal	48,235	10,850	70	.....	.....	.....	.....	54,220	14,526	38	
	" Ferry	10,075	2,006	99	.....	.....	.....	.....	10,075	2,006	99	
	Stean Nav. Co.	13,113	5,491	77	.....	.....	.....	.....	13,113	5,491	77	
	Connolly Whf.	9,978	4,409	68	.....	.....	.....	.....	9,978	4,409	68	
	Peake Bros.	13,995	5,856	02	.....	.....	.....	.....	13,995	5,856	02	
	Queen St. Slip.	3,915	1,109	03	.....	.....	.....	.....	3,915	1,109	03	
	George Peaks Wharf	6,885	2,232	03	.....	.....	.....	.....	6,885	2,232	03	
	" Poole Wharf	12,240	1,609	95	.....	.....	.....	.....	12,240	1,609	95	
	" McMillan	6,165	1,320	13	.....	.....	.....	.....	6,165	1,320	13	
	" Dom. Building Sewer	5,355	1,146	68	.....	.....	.....	.....	5,355	1,146	68	
	" Pub. Sewerage	2,880	679	12	.....	.....	.....	.....	2,880	679	12	
" Geo. Falls Whf	11,520	3,001	96	.....	.....	.....	.....	11,520	3,001	96		
" Carvell Bros.	2,880	798	04	.....	.....	.....	.....	2,880	798	04		
" Falcon wood Asylum Whf	17,415	5,188	61	.....	.....	.....	.....	17,415	5,188	61		
" Webster's Corner, East River.	293	43	47	.....	.....	.....	.....	293	43	47		
" Crapaud, Victoria	149,555	47,548	33	.....	.....	.....	.....	184,290	60,644	84		
" Pownal Bay	43,465	10,380	28	.....	.....	.....	.....	43,465	10,380	28		

158,284 53

SESSIONAL PAPER No. 19

Rock Point.....	82,920	13,426 13	.....	.....	82,920	13,426 13
Vernon River.....	25,240	8,292 55	.....	.....	25,240	8,292 55
Wood Islands.....	11,801 57	8,405	.....	.....	11,801 57	8,405
Nine Mile Creek.....	31,650	6,286 45	.....	.....	31,650	6,286 45
Ubley Wharf.....	750	150 51	.....	.....	750	150 51
Carris Point.....	12,165	2,441 28	.....	.....	12,165	2,441 28
Pine.....	3,825	756 24	.....	.....	3,825	756 24
Port Augustus.....	3,195	631 68	.....	.....	3,195	631 68
Southport Ferry.....	45,300	7,508 75	.....	.....	45,300	7,508 75
Red Point.....	7,161	3,879 60	.....	.....	7,161	3,879 60
North Rustico.....	13,536	4,775 38	.....	.....	13,536	4,775 38
South Rustico.....	11,649	4,109 67	.....	.....	11,649	4,109 67
Canthiers Creek.....	17,847	8,305 50	.....	.....	17,847	8,305 50
Malpeque.....	28,575	3,483 32	.....	.....	28,575	3,483 32
French River.....	41,671	13,311 46	.....	.....	41,671	13,311 46
Bay View.....	4,035	1,912 87	.....	.....	4,035	1,912 87
Wedlocks.....	1,260	520 48	.....	.....	1,260	520 48
Holidays Wharf.....	15,435	4,408 78	.....	.....	15,435	4,408 78
Marine and Fisheries Wharf.....	11,610	4,069 19	297,700 81	.....	11,610	4,069 19
Summerside.....	91,571	28,032 51	.....	.....	91,571	28,032 51
Hurds Point Pier.....	65,565	14,315 47	.....	.....	65,565	14,315 47
Tignish.....	11,387	13,005 45	.....	.....	11,387	13,005 45
Cascumpec.....	1,157	538 42	.....	.....	1,157	538 42
Cape Traverse.....	16,740	5,105 89	.....	.....	16,740	5,105 89
Holmans Wharf.....	9,585	1,299 21	62,266 95	.....	9,585	1,299 21
Totals.....	1,633,858	435,223 48	97,730	39,801 00	1,674,518	475,024 48
Prince.....						254,473 00

EXPENDITURE for Dredging in Quebec for the Thirty-seventh Year ended March 31, 1909.

From Appropriations Maritime Provinces.

[illegible]

9-10 EDWARD VII., A. 1910

STATEMENT of Dredging in the Maritime Provinces, showing quantities removed by and expenditure of each dredge during the thirty-seven years ended March 31, 1909.

Dredge.	TOTAL QUANTITIES AND COST FOR THIRTY-SIX YEARS ENDING MARCH 31, 1908.				FOR THE YEAR 1908-9.				TOTAL FOR THIRTY-SEVEN YEARS ENDING MARCH 31, 1909.			
	Total Quantity.		Cost.		Quantity.		Cost.		Total Quantity.		Total Cost.	
	Cub. yds.	\$ cts.	\$ cts.	Cost per Cubic Yard.	Cub. yds.	\$ cts.	\$ cts.	Cost per Cubic Yard.	Cub. yds.	\$ cts.	\$ cts.	Cost per Cubic Yard.
St. Lawrence.....	1,775,254	400,335 14	0 25-93		72,240	13,377 98	0 18-51		1,847,494	473,713 12	0 25-64	
Canada.....	1,207,194	376,745 74	0 31-20		36,435	4,305 87	0 11-55		1,243,629	381,051 61	0 30-62	
New Dominion.....	1,931,609	343,174 64	0 17-76		59,720	16,405 71	0 27-47		1,991,419	359,680 35	0 18-45	
Prince Edward.....	1,526,278	410,490 21	0 26-83		40,680	9,197 12	0 22-36		1,566,958	419,687 33	0 26-78	
(Old) Cape Breton.....	534,938	133,074 33	0 25-99		.....	.....	.....		534,938	139,074 33	0 25-39	
Geo. McKenzie.....	836,989	354,520 31	0 42-35		19,760	2,435 80	0 15-44		856,749	357,456 11	0 41-72	
Cape Breton.....	1,001,520	184,071 20	0 18-37		24,885	7,365 63	0 29-59		1,026,405	191,436 23	0 18-65	
New Brunswick.....	486,600	97,812 46	0 20-09		51,465	8,888 78	0 17-27		538,065	106,701 24	0 19-45	
W. S. Fielding.....	417,390	76,000 14	0 18-20		350,515	61,221 08	0 17-46		567,935	137,221 22	0 17-86	
Montague.....	71,200	23,941 21	0 33-62		57,030	8,249 51	0 14-46		128,230	32,190 72	0 25-88	
Northumberland.....	327,296	17,825 59	0 05-44		185,899	11,713 57	0 06-30		513,195	29,539 16	0 05-75	
Loggieville (contract).....	13,201	4,888 04	0 37-02		.....	.....	.....		13,201	4,888 04	0 37-02	
	10,129,559	2,488,879 01	0 24-57		898,579	143,660 45	0 24-25		11,028,138	2,632,539 46	0 23-87	

SESSIONAL PAPER No. 19

STATEMENT of Dredging performed by hand in the Maritime Provinces, showing quantities removed and expenditure at each locality for the thirty-seventh year ended March 31, 1909.

Locality.	TOTAL QUANTITIES AND COST FOR THIRTY-SIX YEARS ENDING MARCH 31, 1908.				FOR THE YEAR 1908-9.				TOTAL FOR THIRTY-SEVEN YEARS ENDING MARCH 31, 1909.			
	Total Quantity.		Cost.		Quantity.		Cost.		Total Quantity.		Cost.	
	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	\$ cts.	Cub. yds.	\$ cts.	\$ cts.	\$ cts.
Parrsboro', N.S.	42,595	0 30-06	12,804 68	0 30-06	.....	.....	.....	.....	42,595	12,804 68	0 30-06	0 30-06
Windsor, N.S.	5,450	0 29-86	1,627 60	0 29-86	.....	.....	.....	.....	5,450	1,627 60	0 29-86	0 29-86
Milton, N.S.	663	0 75-33	499 46	0 75-33	.....	.....	.....	.....	633	499 46	0 75-33	0 75-33
Racquette, ...	1,645	0 30-17	496 38	0 30-17	.....	.....	.....	.....	1,645	496 38	0 30-17	0 30-17
	50,353	0 30-64	15,428 12	0 30-64	.....	.....	.....	.....	50,353	15,428 12	0 30-64	0 30-64

9-10 EDWARD VII., A. 1910

STATEMENT OF Dredging showing Quantities removed in each Province and Cost of each Work for the Thirty-seventh Year ended March 31, 1909.

Fiscal Year.	NEW BRUNSWICK.			NOVA SCOTIA.			QUEBEC.			PRINCE EDWARD ISLAND.			Total Quantity.	Total Expenditure.	Cost per Cubic Yard.
	Quantity.	Cost.	Cubic yds.	Quantity.	Cost.	Cubic yds.	Quantity.	Cost.	Cubic yds.	Quantity.	Cost.				
1872-3.....	38,060	13,240 50	8,422 70	23,260	8,422 70	2,392 92	6,800	2,392 92	18,655	9,892 89	61,320	21,663 20	61,320	21,663 20	0 25 328
1873-4.....	57,725	14,395 57	6,545 61	18,600	6,545 61	6,800	6,800	6,800	18,655	9,892 89	83,125	23,384 10	83,125	23,384 10	0 28 71
1874-5.....	78,223	17,325 05	24,416	13,238 83	24,416	13,238 83	13,238 83	13,238 83	18,655	9,892 89	121,294	40,456 77	121,294	40,456 77	0 33 354
1875-6.....	79,935	17,640 52	91,975	21,855 90	91,975	21,855 90	21,855 90	21,855 90	58,253	10,891 80	230,192	49,818 22	230,192	49,818 22	0 21 642
1876-7.....	97,690	23,161 90	127,785	34,846 74	127,785	34,846 74	34,846 74	34,846 74	74,460	12,011 18	299,935	70,766 91	299,935	70,766 91	0 23 594
1877-8.....	81,070	23,323 92	106,857	29,607 94	106,857	29,607 94	29,607 94	29,607 94	82,860	12,011 18	270,787	64,943 04	270,787	64,943 04	0 23 983
1878-9.....	132,555	27,400 22	116,307	28,267 39	116,307	28,267 39	28,267 39	28,267 39	46,490	9,164 07	295,352	64,831 88	295,352	64,831 88	0 21 951
1879-80.....	63,540	16,581 79	127,684	34,765 84	127,684	34,765 84	34,765 84	34,765 84	36,390	12,674 98	228,379	64,396 69	228,379	64,396 69	0 28 197
1880-1.....	44,315	12,335 85	57,118	23,061 64	57,118	23,061 64	23,061 64	23,061 64	46,355	9,298 33	180,085	45,439 46	180,085	45,439 46	0 25 232
1881-2.....	79,640	18,626 87	59,566	33,363 71	59,566	33,363 71	33,363 71	33,363 71	47,325	9,356 57	216,531	61,347 15	216,531	61,347 15	0 24 331
1882-3.....	48,563	13,422 70	143,616	32,996 93	143,616	32,996 93	32,996 93	32,996 93	68,335	11,080 37	290,716	67,590 00	290,716	67,590 00	0 25 890
1883-4.....	47,058	17,103 38	157,560	49,050 68	157,560	49,050 68	49,050 68	49,050 68	79,750	13,355 05	284,368	79,509 01	284,368	79,509 01	0 27 957
1884-5.....	128,997	24,490 35	76,164	25,250 73	76,164	25,250 73	25,250 73	25,250 73	55,075	8,668 01	268,359	62,232 42	268,359	62,232 42	0 23 242
1885-6.....	68,505	14,874 63	56,790	21,482 05	56,790	21,482 05	21,482 05	21,482 05	17,137	10,349 66	142,432	46,706 34	142,432	46,706 34	0 32 743
1886-7.....	69,440	11,452 86	53,400	25,621 19	53,400	25,621 19	25,621 19	25,621 19	6,137	6,214 74	128,977	43,288 79	128,977	43,288 79	0 33 56
1887-8.....	50,132	9,252 50	84,175	29,847 60	84,175	29,847 60	29,847 60	29,847 60	3,775	5,899 90	138,162	45,600 00	138,162	45,600 00	0 32 58
1888-9.....	63,633	16,598 08	56,910	32,697 00	56,910	32,697 00	32,697 00	32,697 00	24,240	15,502 95	144,783	64,798 03	144,783	64,798 03	0 27 29
1889-90.....	86,008	20,544 93	59,783	22,821 55	59,783	22,821 55	22,821 55	22,821 55	31,422	11,085 39	177,273	54,451 87	177,273	54,451 87	0 30 71
1890-1.....	96,588	20,375 06	61,638	24,386 57	61,638	24,386 57	24,386 57	24,386 57	19,004	8,843 92	177,290	53,605 55	177,290	53,605 55	0 30 23
1891-2.....	75,023	20,592 85	81,993	27,376 08	81,993	27,376 08	27,376 08	27,376 08	31,382	12,788 31	188,398	60,757 27	188,398	60,757 27	0 32 249
1892-3.....	108,035	20,742 26	40,834	18,125 58	40,834	18,125 58	18,125 58	18,125 58	66,585	15,112 83	215,354	56,980 67	215,354	56,980 67	0 26 44
1893-4.....	77,505	21,564 27	59,581	28,664 99	59,581	28,664 99	28,664 99	28,664 99	61,536	12,269 24	198,622	62,498 50	198,622	62,498 50	0 31 46
1894-5.....	59,715	13,630 11	105,463	32,292 70	105,463	32,292 70	32,292 70	32,292 70	48,060	10,428 90	213,238	56,261 71	213,238	56,261 71	0 26 38
1895-6.....	98,905	21,352 63	36,428	15,828 89	36,428	15,828 89	15,828 89	15,828 89	36,360	10,299 93	171,693	47,481 45	171,693	47,481 45	0 27 65
1896-7.....	263,975	34,050 86	64,735	22,080 46	64,735	22,080 46	22,080 46	22,080 46	51,078	12,788 31	339,788	67,068 94	339,788	67,068 94	0 19 73
1897-8.....	187,325	27,611 17	147,085	31,497 57	147,085	31,497 57	31,497 57	31,497 57	46,710	10,701 49	381,120	69,810 23	381,120	69,810 23	0 18 31
1898-9.....	105,058	23,315 82	155,510	36,628 81	155,510	36,628 81	36,628 81	36,628 81	51,040	13,283 71	311,608	73,298 34	311,608	73,298 34	0 23 50
1899-1900.....	175,935	28,232 46	152,633	37,589 22	152,633	37,589 22	37,589 22	37,589 22	94,364	17,537 73	422,332	83,359 41	422,332	83,359 41	0 19 76
1900-1.....	205,369	32,615 29	94,557	36,141 17	94,557	36,141 17	36,141 17	36,141 17	26,020	18,984 13	325,946	87,740 59	325,946	87,740 59	0 26 91
1901-2.....	218,210	28,508 97	145,142	36,247 35	145,142	36,247 35	36,247 35	36,247 35	51,620	16,196 95	405,682	83,953 27	405,682	83,953 27	0 20 63
1902-3.....	197,297	36,195 40	134,648	32,856 93	134,648	32,856 93	32,856 93	32,856 93	55,943	16,360 33	387,798	85,212 66	387,798	85,212 66	0 21 97
1903-4.....	252,725	53,046 12	94,075	34,171 45	94,075	34,171 45	34,171 45	34,171 45	49,560	13,775 37	396,900	100,992 94	396,900	100,992 94	0 25 44
1904-5.....	193,955	46,348 89	203,460	33,359 47	203,460	33,359 47	33,359 47	33,359 47	33,030	17,123 82	430,445	96,832 18	430,445	96,832 18	0 22 49
1905-6.....	224,058	32,549 89	271,637	36,111 20	271,637	36,111 20	36,111 20	36,111 20	60,683	11,089 96	556,377	120,072 24	556,377	120,072 24	0 21 58
1906-7.....	120,095	31,538 51	176,321	61,284 54	176,321	61,284 54	61,284 54	61,284 54	53,615	19,047 37	350,031	111,876 42	350,031	111,876 42	0 31 96
1907-8.....	235,537	58,976 16	792,878	112,615 07	792,878	112,615 07	112,615 07	112,615 07	100,740	2,435 76	1,136,735	207,022 09	1,136,735	207,022 09	0 18 21
1908-9.....	519,190	120,186 39	274,439	50,117 13	274,439	50,117 13	50,117 13	50,117 13	97,730	39,801 00	9,8579	217,860 26	9,8579	217,860 26	0 23 97
	4,668,601	985,625 03	4,613,072	1,194,059 31	4,613,072	1,194,059 31	1,194,059 31	1,194,059 31	42,785	18,149 53	1,731,568	475,091 80	1,731,568	475,091 80	0 24 56

9-10 EDWARD VII., A. 1910

Cost at localities dredged in the Maritime Provinces during the fiscal year ending March 31, 1909

Dredge.	Locality.	Date.	Time Dredging. Hrs. Min.	Quantity. C. yds.	Cost.		Cost per Cubic Yard
					\$	cts.	
St. Lawrence.	Pictou Bar, Pictou, Pictou Co., N.S.	April 28 to May 20, 1908	53 10	7,560	2,070 14	0 27 38	
	Mission Point, Bonaventure Co., Que.	June 1 to 19, and July 15 to 28, 1908.	56 50	9,450	2,532 24	0 26 79	
	Bar between Mission Point and Campbellton, N.B.	June 20 to July 14, 1908.	56 20	7,770	1,803 24	0 23 20	
	Oak Bay, Restigouche Co., N.B.	July 29 to Aug. 8, 1908	44 25	7,770	3,052 14	0 12 25	
Canada.	Traverse, Restigouche Co., N.B.	Aug. 9 to Sept. 30, 1908.	123 20	24,290	4,025 28	0 16 57	
	Hillyards Wharf, Dalhousie, Restigouche Co., N.B.	Oct. 1 to Nov. 9, 1908.	76 55	15,400	1,994 94	0 12 35	
	Marine ship, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908.	18 20	1,700	345 39	0 20 32	
	Yarmouth, Yarmouth Co., N.S.	April 26 to June 30, and July 24 to 31, 1908.	295 18	34,735	3,969 48	0 11 40	
New Dominion.	St. Andrews, New Wharf, Charlotte Co., N.B.	May 21 to Aug. 24, 1908.	638 00	20,250	4,080 18	0 23 11	
	St. Andrews Basin, East Entrance, Charlotte Co., N.B.	Aug. 25 to Sept. 9, and Jan. 8 to Mar. 31, 1909.	282 45	29,530	5,549 98	0 27 09	
	St. George, Charlotte Co., N.B.	Sept. 10 to Nov. 26, 1908	397 23	12,720	4,396 70	0 34 56	
	L'Écluse, Charlotte Co., N.B.	Nov. 27 to 30, and Dec. 1 to 15, 1908.	53 15	4,145	933 26	0 22 51	
Prince Edward.	Black Harbour, Charlotte Co., N.B.	Dec. 16 to 28, 1908.	39 00	2,055	845 59	0 41 14	
	Victoria, Crapaud, Queens Co., P.E.I.	May 1 to Sept. 28, 1908.	787 46	31,635	7,181 59	0 20 70	
	Pownal, Queens Co., P.E.I.	Sept. 29 to Nov. 23, 1908	171 40	5,385	2,015 53	0 33 67	
	Port Mulgrave, Guysboro Co., N.S.	April 30 to May 11, 1908	70 30	3,735	571 30	0 09 94	
Geo. McKenzie.	Sherbrooke, Guysboro Co., N.S.	May 12 to July 31, 1908.	429 32	15,425	2,564 50	0 16 10	
	Battery Shoal, Cape Breton Co., N.S.	May 18 to 21, 23, 26, 27 and 30; June 1 to 15, 20, 26 and 29, and July 1 to 4, 8, 22, 23, 30 and 31, 1908	161 15	13,545	4,675 00	0 34 51	
	Lewis Wharf and Shoal, Outside, Cape Breton Co., N.S.	May 19 and 27 to June 30, and July 9, 10, 13 to 18, 20, 21 and 29, 1908	80 30	11,130	2,596 51	0 23 32	
	Dominion Coal Co. wharf, Cape Breton Co., N.S.	May 22, 1908.	6 00	210	93 52	0 44 53	
New Brunswick.	Long Island, Kennebecasis River, Kings Co., N.B.	April 15 to May 23; June 18 to 22, and Nov. 14 to 18, 1908.	329 00	5,390	1,577 07	0 29 31	
	Flewelling Wharf, " "	May 23 to June 2, 1908.	63 00	1,400	319 14	0 22 80	
	Reids Point " "	June 3 to 9, and Nov. 10 to 13, 1908.	78 00	980	351 92	0 35 30	
	Clifton " "	June 10 to 13, 1908.	24 00	620	157 46	0 25 40	
W. S. Fielding.	Moss Glen " "	June 15 to 17, 1908.	25 00	770	129 77	0 16 85	
	Whitehead " "	June 23 to 30, 1908.	68 30	2,500	319 37	0 12 41	
	Murphys Wharf, Perry Point, Kennebecasis River, " "	July 1 to 9, and Nov. 5 to 7, 1908.	149 00	9,050	733 86	0 08 10	
	Sealys Shoal, " "	July 20 to Oct. 15, 1908.	635 30	34,615	3,763 62	0 10 87	
W. S. Fielding.	Hampton, " "	Oct. 16 to Nov. 4, 1908	123 00	6,620	1,528 05	0 25 38	
	Rothsay, " "	Nov. 19 and 20, 1908	13 00	130	17 52	0 13 47	
	Harbour Channel, St. John, St. John Co., N.B.	April 1 to Oct. 29; Nov. 7 to 25, and Dec. 19 to Mar. 16, 1909.	689 37	336,870	58,140 30	0 17 26	

SESSIONAL PAPER No. 19

Montague.....	Winter Port Berths,	"	"	Oct. 30 to Nov. 6 and 27 to 30, and Dec. 1 to 17, 1908.....	50 35	13,675	3,080 78	0 22 53
Northumberland	Souris, Kings Co., P. E. I.....			May 6 to 25, and Nov. 24 to 30, 1908.....	113 00	5,350	1,234 26	0 23 07
	McPhersons Cove, Grand River, P. E. I.....			May 26 to June 11, and July 10 to 14, 1908.....	140 30	7,700	1,143 40	0 18 74
	Public Wharf, Annandale, P. E. I.....			June 12 to July 9, 1908.....	143 30	11,800	1,361 82	0 11 56
	Murray River, Kings Co., P. E. I.....			July 15 to Sept. 26, 1908.....	398 30	27,550	3,193 07	0 12 67
	Murray Harbour South, Kings Co., P. E. I.....			Oct. 15 to Nov. 23, 1908.....	35 00	4,650	713 96	0 15 35
	La Have River, Lunenburg Co., N. S.....			April 6 to May 14, 1908.....	237 00	128,086	3,287 66	0 02 56
	Liverpool, Queens Co., N. S.....			May 15 to July 31, 1908.....	245 00	57,813	8,425 91	0 11 58

9-10 EDWARD VII., A. 1910

Cost at various localities dredged by the Departmental Dredges during the Fiscal Year ending March 31, 1909.

'ST. LAWRENCE.'

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	Yds.	\$ cts.	cts.
Pictou Bar, Pictou, Pictou Co., N.S.	April 28 to May 20, 1908 ..	53 10	7,560	2,070 14	27.38
Mission Point, Bonaventure Co., P.Q.....	June 1 to 13, and July 15 to 28, 1908.....	56 50	9,450	2,532 24	26.79
Bar between Mission Point and Campbellton, N.B.....	June 20 to July 14, 1908....	56 20	7,770	1,803 24	23.20
Oak Bay, Restigouche Co., N.B....	July 29 to Aug. 8, 1908....	44 25	7,770	952 28	12.25
Traverse, Restigouche Co., N.B....	Aug. 9 to Sept. 30, 1908....	123 20	24,290	4,025 14	16.57
Hilyards Wharf, Dalhousie, Restigouche Co., N.B.....	Oct. 1 to Nov. 9, 1908.....	76 55	15,400	1,994 94	12.95

'CANADA.'

Marine Slip, Yarmouth, Yarmouth Co., N.S.	April 18 to 25, 1908.....	18 20	1,700	345 39	20.32
Yarmouth, Yarmouth Co., N.S....	April 26 to June 30, and July 24 to 31, 1908	295 18	34,735	3,960 48	11.40

'NEW DOMINION.'

St. Andrews, New Wharf, Charlotte Co., N.B.....	May 21 to Aug. 24, 1908....	638 00	20,250	4,680 18	23.11
St. Andrews Basin, East Entrance, N.B.....	Aug. 25 to Sept. 9, and Jan. 8 to March 31, 1909.	282 45	20,550	5,549 98	27.00
St. George, Charlotte Co., N.B....	Sept. 10 to Nov. 26, 1908...	397 23	12,720	4,396 70	34.56
L'Etéte, Charlotte Co., N.B.....	Nov. 27 to 30, and Dec. 1 to 15, 1908.....	53 15	4,145	933 26	22.51
Black Harbour, Charlotte, Co., N.B.	Dec. 16 to 28.. 1908.....	39 00	2,055	845 59	41.14

'PRINCE EDWARD.'

Victoria Crapaud, Queens Co., P.E.I.....	May 1 to Sept. 28, 1908....	787 46	34,695	7,181 59	20.70
Pownal, Queens Co., P.E.I.	Sept. 29 to Nov. 23, 1908 ..	171 40	5,985	2,015 53	33.67

'GEO. McKENZIE.'

Port Mulgrave, Guysboro, Co., N.S.	April 30 to May 11, 1908 ..	70 30	3,735	371 30	09.94
Sherbrooke, Guysboro, Co., N.S....	May 12 to July 31, 1908 ...	420 32	15,925	2,564 50	16.10

SESSIONAL PAPER No. 19

Cost at various localities dredged by the Departmental Dredges, &c.—Continued.

'CAPE BRETON.'

Locality.	Date.	Actual Dredging Time.	Quantity.	Cost.	Cost per Cubic Yard.
		Hrs. Min.	Yds.	\$ cts.	cts.
Battery Shoal, Cape Breton Co., N.S.	May 18 to 21, 23, 26, 27 and 30, and June 1 to 15, 20 to 26 and 29, July 1 to 4, 8, 22, 23, 30 and 31, 1908..	161 15	13,545	4,675 00	34·51
Lewis Wharf, and Shoal outside, N.S.	May 19 and 20, June 27 and 30, July 9, 10, 13 to 18, 20, 21 and 29, 1908	80 30	11,130	2,596 51	23·32
Dominion Coal Co. Wharf, N.S.	May 22, 1908..	6 00	210	93 52	44·53

'NEW BRUNSWICK.'

Long Island, Kennebecasis River, Kings Co., N.B.	April 15 to May 23, June 18 to 22, Nov. 14 to 18, 1908	320 00	5,380	1,577 07	29·31
Flewelling Wharf, Kennebecasis River, Kings Co., N.B.	May 25 to June 2, 1908....	63 00	1,400	319 14	22·80
Reids Point Wharf, Kennebecasis River, Kings Co., N.B.	June 3 to 9 and Nov. 10 to 13, 1908.....	78 00	980	351 92	35·90
Clifton Wharf, Kennebecasis River, Kings Co., N.B.	June 10 to 13, 1908.....	24 00	620	157 46	25·40
Moss Glen, Kennebecasis River, Kings Co., N.B.	June 15 to 17, 1908.....	25 00	770	129 77	16·85
Whitehead Wharf, Kennebecasis River, Kings Co., N.B., ...	June 23 to 30, 1908.....	68 30	2,500	310 37	12·41
Murphy Wharf, Perry Point, Ken- nebecasis River, Kings Co., N.B.	July 1 to 9, and Nov. 5 to 7, 1908.....	149 00	9,050	733 86	08·10
Sealy's Shoal, Kennebecasis River, Kings Co., N.B.	July 20 to Oct. 15, 1908....	655 30	34,615	3,763 62	10·87
Hampton, Kennebecasis River, Kings Co., N.B.	Oct. 16 to Nov. 4, 1908....	123 00	6,020	1,528 05	25·38
Rothsay, Kennebecasis River, Kings Co., N.B.	Nov. 19 to 20, 1908.....	13 00	130	17 52	13·47

'W. S. FIELDING.'

Harbour Channel, St. John, St. John Co., N.B.	April 1 to Oct. 29, and Nov. 7 to 25, 1908, and Dec. 19 to Mar. 16, 1909.....	689 37	336,870	58,140 30	17·26
Winter Port Berths, St. John, St. John Co., N.B.	Oct. 30 to Nov. 6, and 27 to 30, and Dec. 1 to 17, 1908.....	50 35	13,675	3,080 78	22·53

'MONTAGUE.'

Souris, Kings Co., P.E.I.	May 6 to 25, and Nov. 24 to 30, 1908.....	113 00	5,350	1,234 26	23·07
McPhersons Cove, Grand River, P.E.I.	May 26 to June 11, and July 10 to 14, 1908	140 30	7,700	1,443 40	18·74
Public Wharf, Annandale, P.E.I.	June 12 to July 9, 1908....	143 30	11,800	1,364 82	11·56
Murray River, Kings Co., P.E.I.	July 15 to Sept. 26, 1908....	389 30	27,550	3,493 07	12·67
Murray Harbour South, P.E.I.	Oct. 15 to Nov. 23, 1908....	95 00	4,650	713 96	15·35

'NORTHUMBERLAND.'

LaHave River, Lunenburg Co., N.S.	April 6 to May 14, 1908 ...	237 00	128,086	3,287 66	02·56
Liverpool, Queens Co., N.S.	May 15 to July 31, 1908....	245 00	57,813	8,425 91	14·58

9-10 EDWARD VII., A. 1910

PROVINCE OF QUEBEC.

BECANOUR.

The dredge *Hercules* worked at this place between June 29 and November 17, 1908, and the dredging consisted in cleaning out the cuts made along the bank in the basin the previous season. There being no wharf, boats have to unload on shore. Six cuts were made, each 700 feet long, and two cuts, 2,000 feet long each, to a width of 20 feet.

CHICOT RIVER (BERTHIER).

Departmental dredge *St. Louis* worked at this place between October 5 and November 9, 1908, making 3 cuts, 640 feet long and 25 feet wide each, at the entrance of this river, for the purpose of loading hay and grain barges. Some 7,440 cubic yards of clay and sand were removed.

CHICOUTIMI.

The dredge *Algonquin*, belonging to the General Construction Company, worked at this place between July 18 and November 14, 1908. The dredging performed was at the wharf in the harbour. The site for the extension of the wharf was dredged to 15 feet and the approach to the said wharf was dredged to 22 feet. Some 64,615 cubic yards of gravel and sand were removed.

CHATEAUGUAY.

Dredge No. 2, Dominion Dredging Company, worked at this place between June 9 and November 10, 1908, and the dredging done consisted in deepening and widening the channel at the mouth of the Chateauguay river, also opposite Ross' Point, so as to give a better channel for the general traffic of boats. Seven cuts were made to a width of 20 feet and a length each of two of 1,600, two of 800, and three of 1,000 feet. Some 57,221 cubic yards of clay, gravel and sand were removed.

DORION.

Dredge *Canada*, belonging to L. Cohen & Son, worked at this place between October 5 and November 26, 1908, and also dredge *Hercules*, belonging to L. Cohen & Son, between June 1 and 15, 1908. Two cuts were made, 500 and 240 feet long and 30 feet wide, for the purpose of making an approach to the basin. Some 9,695 cubic yards of clay, sand and rock were removed.

FASSETT.

Departmental dredge *Nipissing* worked at this place between July 27 and August 15, 1908, making three cuts alongside the wharf, 348, 111 and 434 feet long and 30 feet wide. The water was deepened to allow boats to arrive at the wharf with more facility. Some 13,455 cubic yards of sand and clay were removed.

GATINEAU RIVER.

From June 13 to July 25, 1908, dredge *Nipissing*, belonging to the Department of Public Works, worked at this place making seven cuts, 199, 215, 222, 278, 194 and 123 feet long, with a width of 30 feet. The nature of this work was the removing of a sand shoal which obstructed the channel. About 17,640 cubic yards of clay and sand were removed.

SESSIONAL PAPER No. 19

GODEFROY RIVER.

Dredge *St. Pierre*, belonging to Antoine St. Pierre, worked at this place, from September 1 to 9, 1908, and from October 5 to November 14, 1908, removing 60,825 cubic yards of sand and clay. Three cuts were made, 1,000, 1,800 and 810 feet long and 30 feet wide, deepening in front of the government wharf.

GREEN SHOALS.

Departmental dredge *Nipissing* worked at this place between November 16 and 21, 1908, making two cuts, 63 feet and 30 feet long and 30 feet wide, in the main channel, to remove material which had fallen in the channel. Some 90 cubic yards of clay and sand were removed.

ILE AUX FOINS.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from May 27 to September 25, 1908, making three cuts, two 6,000 feet and one 3,500 feet long and 24 feet wide, for the purpose of removing a shoal which had formed in the main channel. About 87,155 cubic yards of clay, sand and quicksand were removed.

ILE AUX NOIX.

Departmental dredge *Richelieu* worked at this place from June 9 to September 25, 1908. Work was performed for the purpose of deepening and cleaning out alongside the wharf. Seven cuts were made, 125, 135, 52, 40, 120, 80 and 90 feet long, all to a width of 20 feet. Three cuts were made, deepening the channel at the mouth of the Johnston river, 95, 40 and 100 feet long and 20 feet wide. One cut, 250 feet long and 20 feet wide, was also made opposite Gosselin's hotel, leading into main channel. Some 27,750 cubic yards of clay, and sand were removed.

ILE PERROT.

From July 18 to August 10, 1908, dredge *Oneida*, belonging to L. Cohen & Son, worked at this place, making three cuts, 150 feet long and three cuts 75 feet long and 25 feet wide, near the powder factory wharf. This was the cleaning up of the channel made the previous season, which had partly filled in at places. About 6,045 cubic yards of sand, clay and stones were removed.

LAKE ST. JOHN.

Dredging.

Dredging at Roberval, Lake St. John, Chicoutimi county, is done by dredge *Lac St. Jean*, assisted by tug *Marie-Louise*.

The dredge *Lac St. Jean* is of the following dimensions: Length over all, 75 feet; width, 25 feet; draft, 2½ feet; greater working depth, 18 feet.

During the fiscal year 1908-9, the dredge was employed at Roberval, working in the harbour. Material removed, 13,585 cubic yards; expenditure, \$4,495.39.

During the winter, the dumping scows and tug *Marie-Louise* were repaired; a new crane was put on the dredge.

L'ASSOMPTION.

From July 17 to November 11, 1908, dredge No. 3, belonging to the Dominion Dredging Company, worked here, deepening the channel and also removing a shoal at the entrance of L'Assomption river. Twenty cuts were made, 225 feet long each and 30 feet wide. Some 89,994½ cubic yards of clay, stones and sand were removed.

9-10 EDWARD VII., A. 1910

LIEVRE RIVER.

The dredging at this place was performed by the departmental dredge *No. 2*, and consisted in removing part of a landslide from the channel as well as deepening and widening the channel at the foot of the locks. A cut, about 500 feet long, was made with a width of 25 feet. One other cut, about 150 feet long and 25 feet wide, was made in the channel, about $\frac{1}{4}$ of a mile below the locks. The entrance to the locks was also cleaned out. One other cut was also made for the purpose of deepening and widening the channel at the head of the locks. Some 13,177 cubic yards of clay were removed.

LOUISEVILLE.

Dredge *Prince Guy*, belonging to W. J. Pourpore, working at this place from May 23 to July 4, 1908, making two cuts, 600 feet long by 40 feet wide, in front of the wharf. Some 23,142 cubic yards of clay were removed.

MONTEBELLO.

Departmental dredge *Nipissing*, worked here from October 12 to 24, 1908. Three cuts were made through a sand bar alongside the wharf, 187, 236 and 247 feet long and 30 feet wide. This work is for the purpose of deepening as well as making a basin. Some 7,110 cubic yards of sand were removed.

NICOLET.

Dredge *Ottawa*, belonging to Canada Improvement Company, worked here from June 15 to October 10, 1908, and the work consisted in cleaning out the channel alongside the breakwater for the purpose of giving a better channel to passenger boats and also barges carrying stones and wood. Two cuts, each 750 feet long, and two cuts, each 1,750 feet long, were made to a width of 30 feet. Some 44,395 cubic yards of clay and sand were removed.

PAPINEAUVILLE.

The dredging at this place was performed by the departmental dredge *Nipissing* from September 28 to October 10. Two cuts were made, 500 feet and 533 feet long and 30 feet wide, in the channel opposite the saw-mill; 10,035 cubic yards of clay were removed.

POINTE LÉVIS.

Departmental dredge *Challenge* worked at this place from June 11 to July 22, 1908, 6,750 cubic yards of boulders and hardpan were removed. The dredging was done in front of the pulp wood conveyer. Five cuts were made, 557, 557, 95, 100 and 180 feet long each and 26 feet wide.

PORT ST. FRANCIS.

Canada Improvement Company's dredge *Mohawk* worked at this place from July 3 to the 30th, 1908, removing 12,098 cubic yards of sand. Two cuts, 110 and 60 feet long and 26 feet wide, were made for the purpose of cleaning in front of the wharf. Also three other cuts were made from above wharf leading out to the main channel 180 feet long each and 26 feet wide.

QUEBEC.

Four dredges belonging to the department worked at this place, viz.:—the *Challenge* from July 23 to September 30, *International* from May 18 to November

SESSIONAL PAPER No. 19

13 the *Ottawa* from August 10 to November 28, and *Progress* from May 5 to June 20, 1908.

Work was performed at Drolet's basin and consisted in dredging at the entrance to the shipyard. Eight cuts were made 150, 150, 50, 80, 80, 80, 50 and 50 feet long and each 22 feet wide.

Dredging also consisted in deepening the basin between the Grand Trunk Railway wharf and the shore to permit of larger vessels unloading pulpwood. The work done at Louise basin consisted in deepening between the wharf and the shore to permit barges to unload pulpwood to the elevator. Work at Quebec harbour consisted in deepening and levelling the bottom for new cribs.

Inside the Customs basin was also deepened for the purpose of accommodating deeper draught vessels. Work was also performed at Drolet's basin deepening at the entrance to the shipyard. Dredging done at breakwater pier consisted in taking out sand for backfilling in connection with the Davis contract.

The total number of cubic yards removed during the season was 163,910 cubic yards of sand, clay, boulders and gravel.

RIGAUD.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from September 25 to October 10 and from November 9 to 26, 1908. Dredging was performed in front of the wharf for the purpose of giving a better approach to vessels. One cut, 1,785 feet long was made to a width of 36 feet. Another cut was made at the entrance of the river, 1,820 feet long and 36 feet wide; 29,455 cubic yards of clay, sand and rocks were removed.

RIMOUSKI.

Dredge *Progress*, belonging to the department, worked here from June 22 to September 26, 1908, removing 65,800 cubic yards of clay. Dredging consisted in deepening and widening the channel from the wharf to deep water.

RIVER BATISCAN.

Dredge *Capital*, owned by Turcotte & Dufresne, worked at this place from May 27 to November 4, 1908; 108,333 cubic yards of sand were removed. The dredging consisted in making a cut at the mouth of the river from the main channel to the mill, also widening and deepening the channel above C.P.R. bridge.

RIVER DU LOUP (EN HAUT).

From October 12 to 15, 1908, dredge *Ottawa*, W. J. Poupore Co., worked here cleaning out and deepening in front of the government wharf; 5,200 cubic yards of clay was removed.

Dredge *Prince Willie*, belonging to W. J. Poupore Co., worked at this place from July 6 to September 12, and from October 21 to November 13, 1908 removing 102,973 cubic yards of clay and sand.

Operations consisted in cleaning around government wharf and also mill wharf. One cut was made, 900 feet long and 35 feet wide, in the main channel, one half mile below the mill. Work was also done at the mouth of this river and consisted in cleaning out the channel for a distance of about one mile.

RIVER DU LOUP (LOUISEVILLE).

Dredge *Pontiac*, belonging to W. J. Poupore & Co., worked here from June 11 to July 14, 1908, cleaning in front and around the wharf of the Tourville mills, for the purpose of giving more water for vessels loading lumber; 20,645 cubic yards of clay and sand were removed.

9-10 EDWARD VII., A. 1910

RIVER JESUS.

Dredge *Huron*, owned by the Canada Improvement Company, worked at this place from June 18 to November 14, 1908, removing 52,636 cubic yards of clay, boulders and hardpan. Operations consisted in making a channel from the wharf towards River Mascouche. Two cuts were made, 2,600 feet and 1,000 feet long each, and 25 feet wide. Four other cuts were also made 400, 400, 190 and 950 feet long, 25 feet wide in the channel in front of Lachenaie village.

From July 4 to September 5, 1908, dredge *Mohican*, owned by the Canada Improvement Company, also worked at this place, cleaning out a cut for a distance of 2,022 feet in the channel, starting above McDonald's wharf and going towards Mascouche river; 22,836 cubic yards of sand and gravel were removed.

RIVER MASKINONGE.

Dredge *Chateauguay*, owned by L. Cohen & Son, worked here from May 28 to October 10, 1908, removing 66,945 cubic yards of clay and sand. The dredging performed consisted in deepening and widening the channel three miles below the village.

From September 7 to November 10, 1908, dredge *No. 6*, belonging to L. Cohen & Son, also worked here assisting in the above work. This dredging was for the purpose of giving a better channel for the boats carrying general traffic to and from the village. One cut was made, 8,700 feet long and 30 feet wide; 24,971 cubic yards of clay and sand were removed.

RIVER OUELLE.

The dredge *Premier*, owned by the Canada Improvement Company, worked here from July 17 to September 12, 1908. Dredging was performed at this place to permit the ferry steamer, which effectuates a daily summer and winter service between River Ouelle, on the south shore of the St. Lawrence, and Murray Bay and other places on the north shore, to land and find shelter on either side of the wharf. Two cuts were made, about 100 feet wide and 300 feet long. Some 13,916 $\frac{2}{3}$ cubic yards of clay and stones were removed.

RIVER ST. FRANCIS.

From May 8 to December 5, 1908, dredge *Duke of York*, worked here, removing 202,419 cubic yards of clay, sand, gravel and boulders. The dredging done consisted in making two cuts, in front of the wharf, 2,700 feet and 4,000 feet long. Another cut was made, 6,000 feet long, in front of the proposed wharf. One cut, 310 feet long, was made in the main channel opposite Tourville mills. One more cut was also made, 700 feet long, from the proposed wharf at Abenaki Springs to the main channel. All these cuts were made to a width of 33 feet. This dredge belongs to the W. J. Poupore Company.

The dredge *Pontiac*, owned by the W. J. Poupore Company, also worked at this place from May 11 to June 11, 1908, and from November 2 to 21, 1908, removing 72,384 cubic yards of clay, sand and gravel. Two cuts were made, 250 feet long and 33 feet wide, on the west side along the bank, to deepen for a proposed wharf. Two cuts were also made near the entrance of the river, 4,772 and 5,545 feet long and 33 feet wide.

From November 20 to 21, 1908, W. J. Poupore & Company's dredge *Prince Willie* worked at this place, cleaning a cut previously made at the entrance of this river; 2,964 cubic yards of clay were removed.

SESSIONAL PAPER No. 19

ST. JEAN DES CHAILLONS.

From May 11 to June 9, and from October 1 to 31, 1908, departmental dredge *Challenge* worked here, making five cuts in the channel, 500, 200, 225, 468 and 100 feet long and 25 feet wide. The purpose of this work was the deepening and widening of the channel in front of the brick yards; 11,950 cubic yards of sand, clay and boulders were removed.

ST. JOHNS.

Departmental dredge *Richolieu* worked at this place from May 21 to June 6, 1908, making five cuts, 195, 185, 180, 170 and 155 feet long by 20 and 18 feet wide, in the main channel, near Iberville wharf. One other cut was also made in channel, alongside canal bank, 540 feet long and 25 feet wide; 2,962 cubic yards of hardpan and boulders were removed. This dredge also worked here from September 28 to December 4, 1908.

ST. MAURICE RIVER.

Dredge *St. Pierre*, belonging to Antoine St. Pierre, worked at this place from May 15 to August 31, from September 10 to September 30, from October 1 to 3 and from November 16 and 17, 1908, deepening the east channel in front of Grants mills and the west channel near Dalton wharf. The channel was also deepened and widened near Baptist island; 170,800 cubic yards of clay, sand, gravel and boulders were removed.

ST. PIERRE LES BECQUETS.

From August 24 to November 10, 1908, dredge *Mohawk*, belonging to the Canada Improvement Company, worked here, making a cut from main channel towards the wharf, also cleaning up a cut, which was made the previous season and had partly filled in; 39,390 cubic yards of clay, sand and boulders were removed.

ST. PLACIDE.

Dredge *Central City*, belonging to L. Cohen & Son, worked at this place from June 1 to November 25, 1908, making several cuts around the wharf, also making a cut from the main channel to the wharf; 151,956 cubic yards of clay, sand and stones were removed.

SAGUENAY DREDGING.

Some dredging was done during the fiscal year in Chicoutimi harbour, under contract with the General Construction Company, of Montreal.

The site for the extension of the wharf was dredged to 15 feet, and the approach to 22 feet, except close in to the wharf, where it was dredged to 15 feet only.

Some 64,615 cubic yards, consisting of clay, sand, slabs and saw-dust, were removed.

Work was started on July 18 and completed on October 26, 1908.

SOREL.

Departmental dredge *International* worked at this place from November 16 to 21, 1908, removing 2,250 cubic yards of sand and boulders. Work consisted in dredging in the harbour opposite new wharf.

9-10 EDWARD VII., A. 1919

THREE RIVERS.

Dredge *No. 6*, Gaspard de Serre, worked at this place between July 17 and 31, making a cut above Bureau wharf in the channel for the purpose of deepening and cleaning out; 642 cubic yards of clay were removed.

Dredge *Premier*, belonging to L. Cohen & Son, also worked at this place from September 24 to November 19, 1908, removing 30,066 cubic yards of sand. A cut was started at this place, above the government wharf, opposite the old Windmill, near the shore, so as to build a coal wharf and also make a place of refuge for vessels.

VAUDREUIL.

Dredge *Canada*, Dominion Dredging Company, worked at this place from June 20 to September 26, 1908, removing 83,308 cubic yards of clay. Four cuts were made along the front of the wharf, 175 feet long and 30 feet wide, for the purpose of giving a better approach to vessels. Also two other cuts were made, 6,000 feet long and 20 feet wide from the wharf going towards the main channel.

VERDUN.

Dredge *St. Louis*, belonging to the department, worked at this place from June 4 to August 1, 1908, removing 3,702 cubic yards of clay and rocks. The dredging done at this place was in front of the government wharf. Three cuts were made in front and alongside to deepen and clean out an approach. These cuts were made to a length of 250 feet each and a width of 25 feet. Also two cuts of 75 feet were made in the main channel below the wharf to allow boats to turn. Two other cuts were made at the foot of Ile aux Herons, 250 feet long each and 23 feet wide, for the purpose of cleaning out the main channel.

VILLE MARIE.

Departmental dredge *Queen* worked at this place from November 1 to 14, 1908, making two cuts, 254 feet and 118 feet long, with a width of 20 feet each. This work was done to remove material that had fallen in during the spring freshets; 2,520 cubic yards of clay were removed.

YAMACHICHE.

Dredge *Prince Willie*, belonging to the W. J. Poupore Company, worked here from September 14 to October 20, 1908, cleaning out a cut from the main channel to the entrance of this river, a distance of about $1\frac{1}{4}$ miles; 84,126 cubic yards of clay were removed.

W. J. Poupore's dredge *Prince Louis*, also worked at this place, making a cut about 5,000 feet long, 55 feet wide, to widen and deepen the channel at the entrance of this river and allow barges to enter; 119,832 cubic yards of clay were removed. This dredge worked here from May 28 to September 5.

YAMASKA.

Dredge *Pontiac*, belonging to W. J. Poupore Company, worked at this place from July 15 to October 30, 1908, and removed 147,124 cubic yards of sand and clay. One cut, 1,700 feet long, was made in the main channel, near Ile aux Citrons, for the purpose of cleaning the channel where it had filled in. One other cut, 3,000 feet long and 33 feet wide, was also made for the same purpose.

Departmental dredge *St. Louis* also worked here from August 3 to October 3; 11,907 cubic yards of sand and clay were removed. Work consisted in cleaning a

SESSIONAL PAPER No. 19

cut made the previous season, for a length of 2,766 feet, in Bay la Vallière, opposite Ile St. Jean. Two other cuts were also made, 150 feet long each and 25 feet wide, in the main channel at the foot of Ile St. Jean.

PROVINCE OF ONTARIO.

BLANCHE SHOALS.

Dredge No. 1, *T. F. Moore* worked at this place from August 25 to November 23, and dredge No. 2, *T. F. Moore*, from August 11 to November 23, 1908. The dredging performed was the continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.

BLIND RIVER.

Dredge *Meade* worked at this place between June 8 and September 8, 1908, and consisted in the deepening and widening of the channel and approaches to the new government wharf to a depth of 15 feet, and a width of 118 to 215 feet, also deepening the turning basin at the wharf to 15 feet below low water. The turning basin is 280 feet in width. The greatest length of cut made is 2,600 feet; one cut, 25 feet wide by 800 feet long, was made from the government wharf to the White Pine Company's wharf.

BOWMANVILLE.

Between August 17 and September 26, 1908, dredge *Dragon Rouge* worked at this place, making a cut between the piers, 1,350 feet long by 100 feet wide, also dredging in the approaches thereto from the lake; the latter is bell-mouthed, being 300 feet in width at the southerly or outer end, narrowing to 100 feet, to connect with cut between the piers, and 300 feet in length.

BURLINGTON CHANNEL.

Dredge *Chief* worked at this place between April 30 and June 5, and also on June 9, 1908. The dredging performed was between the piers and in the approaches thereto from the lake. The cut between the piers was 80 feet in width by 1,360 feet in length, and the cut from the lake to the piers was 400 feet in length by 170 feet in width at the easterly or outer end, and narrowing to 80 feet between the piers aforesaid.

COBOURG.

The dredging at this place was performed by dredge *Chief* between July 24 and October 15 and also between November 5 and 10, 1908, and consisted in the widening and deepening the approaches to the harbour and widening and deepening the inner basin. The width of cut made this year in approach is, at outer end, 375 feet and, at inner end, 200 feet wide by about 1,100 feet in length. The area dredged in inner harbour is triangular in shape, having a base of about 700 feet adjoining esplanade and side of 275 feet adjoining easterly pier.

COLLINGWOOD.

The dredge *Kingsford* worked at this place between April 28 and November 7, 1908, and the dredging consisted in the deepening of the main channel, where necessary, also dredging to 12 feet between the elevator wharf and the old pier of eastern breakwater. The length of this work was 350 feet along old pier and about 650 feet

9-10 EDWARD VII., A. 1910

along the eastern breakwater. The dredging at and to the Meat Company's wharf, consisted in dredging alongside the wharf a cut, 225 feet in width by 450 feet in length, and, at the end of wharf, a turning basin, 275 feet long by 175 feet wide. This work was partially completed when operations were ordered to be suspended for the season. Some 52,410 cubic yards of hardpan, sand, mud and rock were removed.

DARK CHANNEL.

R. Weddell's dredge *Trenton* worked at this place from June 5 to November 7, 1908, and the dredging consisted in the continuation of the excavation of the channel leading from the Murray canal to Trenton harbour, a distance of some 13,200 feet with a width of 100 feet. This work is nearing completion and should be finished early next season. Some 154,945 cubic yards of clay, gravel, stones, sand, mud and rock were removed.

GARDEN ISLAND.

Dredge *Sir Richard*, belonging to the Department of Public Works, worked at this place from November 9 to 28, 1908, making one cut, 1,000 feet long and one 200 feet long and 35 feet wide each, alongside and in front of the pier. About 7,800 cubic yards of sand and mud were removed.

GODERICH.

Dredge *Arnoldi*, belonging to W. L. Horton, worked at Goderich between May 4 and June 6, and also from August 1 to November 28, 1908, removing 47,410 cubic yards of clay, gravel, sand and mud. Dredging consisted in the enlarging of turning basin in inner harbour, as also excavating a channel at outer entrance to harbour to the required depth.

HAMILTON.

Two dredges, belonging to W. E. Phin, viz.: *Chief* and *Hamil*, worked at this place, dredging a cut, 50 feet wide by 800 feet long, to the easterly side of the channel dug last year, from the Hamilton Steamboat Company's wharfs, making this portion of the channel 160 feet wide, extending out to a channel dredged this year, 200 feet wide by 400 feet in length. A cut was also made alongside the *Turbinia* wharf, 120 feet wide, at the inner or southerly end, and 150 feet wide, at the northerly end, by 450 feet in length, also a berth adjoining the easterly side of the city wharf was excavated, 200 feet wide by 250 feet in length, and a cut in front of the revetment wall, adjoining same at westerly end, 200 feet long by 160 feet wide. A cut was made along the front of the revetment wall, 1,040 feet long by the following widths: 150 feet is 70 feet wide, 450 feet is 100 feet wide, 400 feet is 200 feet wide, and 50 feet is 150 feet wide. The material from this cut was cast over the revetment wall by the clam-shell dredge, the city authorities levelling the same in the rear thereof. The dredge *Chief* worked here from June 6 to 8, and from June 10 to July 7, and the dredge *Hamil* worked from July 28 to November 30, 1908. Some 144,467 cubic yards of sand and clay were removed.

HAWKESBURY.

Dredge *Little Giant*, belonging to L. Cohen & Son, worked at this place from October 13 to November 5, 1908, making two cuts in the channel opposite the cement works, 280 feet and 350 feet long and 20 feet wide. About 4,130 cubic yards of clay and sand were removed.

Dredge *Oneida*, belonging to the Canada Improvement Company, also worked at this place from August 11 to October 10, 1908, cleaning the approaches to and

SESSIONAL PAPER No. 19

around wharf. Ten cuts were made, 400 to 500 feet long each and 30 feet wide. About 31,372½ cubic yards of clay and stones were removed.

KINCARDINE.

W. L. Horton's dredge *Arnoldi* worked at this place from June 24 to July 9, 1908. The dredging was performed to provide required depth for safe entrance to channel and to docks in inner harbour. Some 9,000 cubic yards of clay, gravel and sand were removed.

KINGSTON.

Departmental dredge *Sir Richard* worked at this place from June 4 to August 8, and from October 19 to November 7, 1908, making one cut, 200 feet long, 25 feet wide, alongside Richardson's coal dock. Also four cuts, 300 feet each and 25 feet wide, were made in the harbour of refuge. One other cut was made, 1,000 feet and 25 feet wide in the new channel leading to the smelter. Alongside the Canadian Pacific Railway dock, four cuts were made, 200 feet long and 25 feet wide.

LAKE NIPISSING.

Departmental dredge *Mattawa* worked at this place from June 8 to November 28, 1908. One cut was cleaned up for a distance of 750 feet in the main channel at the mouth of the Sturgeon river. Two cuts were also made in the channel at the mouth of the Little Sturgeon river, 2,000 and 400 feet long and 25 feet wide. Work was also done in the channel at the mouth of the South river. A cut, 3,083 feet long and 25 feet wide, was made. Some 65,950 cubic yards of clay and sand were removed.

LION'S HEAD.

From August 24 to September 26, 1908, the dredge *No. 1*, belonging to the C. S. Boone Dredging & Construction Co., worked at this place, widening and deepening the harbour, by adding a cut to the southwesterly side thereof, some 540 feet in length by an average width of 200 feet. About 14-135½ cubic yards of sand, gravel and boulders were removed.

LITTLE CURRENT.

Dredges *Meade* and *No. 14*, owned by the C. S. Boone Dredging & Construction Co., worked at this place—the *Meade* from April 22 to May 30, 1908, and the *No. 14* from April 23 to November 14, 1908. The work at this place, during 1908, consisted in a continuation of the drilling and blasting and dredging of a channel, 300 feet in width by about 1,800 feet in length, to a depth of 22 feet below low water. This channel will be completed, it is expected, early next season. An extension has been authorized by the removal of an additional segment on the northerly side, some 75 feet in width by 700 feet in length. About half this area was drilled during the fall of 1908.

The quantity of 121,845 cubic yards of rock, clay and sand was removed.

L'ORIGNAL.

Dredge *Nipissing*, belonging to the Department of Public Works, worked at this place from October 26 to November 14, 1908, making two cuts alongside the wharf for the purpose of cleaning out and deepening to allow barges to load alongside. These cuts were 250 feet and 273 feet long and 30 feet wide. Some 6,390 cubic yards of clay and boulders were removed.

9-10 EDWARD VII., A. 1910

MEAFORD.

The dredge *Togo*, owned by R. Weddell, worked at this place from July 20 to September 5, 1908. The dredging at this port consisted in the removal of the material in front of the new revetment wall; the cut was 300 feet in length by 135 feet at the northerly end and triangular in form. This, along with deepening the westerly side of harbour, comprises the dredging done here this season. Some 23,668 cubic yards of hardpan, mud, gravel and clay were removed.

MISSION AND KAMINISTQUIA RIVERS.

Five dredges, belonging to the Great Lakes Dredging Co., worked at this place, viz.:—No. 6, from May 7 to September 5; No. 8, May 4 to December 1; No. 5, from April 23. to December 4; No. 15, from September 7 to December 5; and *Dominion*, from May 9 to December 5, 1908. The channel in the Grand Trunk Pacific dock to Canadian Northern dock was widened to full width of river and deepened to grade covering a length of 5,000 feet by an average width of 300 feet.

Consolidated Elevator.—One dredge cut was made in front of this dock extending from the west end of the old Neebing dock to the west end of Consolidated dock, being 540 feet in length by 30 feet in width.

Elevator D.—Shoal areas in front of this elevator were removed covering a length of 940 feet and average width of 100 feet.

Opposite Ogilvie's Elevator.—Shoal areas on south side of river, covering a length of 1,800 feet, with an average width of 100 feet, were removed.

Kaministiquia River off Mouth of McKellar River.—Three dredge cuts were made in this section removing shoal areas being in length 350 feet and an average width of 120 feet.

McKellar River.—Two dredge cuts were carried down this river from the Kaministiquia river, being 800 feet in length and 75 feet wide.

Mission River.—The Mission river was deepened and widened from its junction with the Kaministiquia river to the shore line of Thunder bay, being a length of 2 miles 600 feet and an average width of 240 feet.

Grand Trunk Pacific Basin.—Dredging was extensively carried on in this section. Three dredges were employed during most of the season on this area. The area excavated was 1,850 feet in length by an average width of 600 feet.

The quantity of 2,858,881 cubic yards, clay, sand, rock and boulders, was removed during the season by the above five dredges.

NEPIGON RIVER.

Dredge No. 9, belonging to The Great Lakes Dredging Company, worked here from September 8 to December 5, 1908, removing 238,826 cubic yards of sand. The dredging consisted in making a channel, 1,716 feet long and 150 feet wide.

NEWCASTLE.

The dredge *Dragon Rouge*, owned by F. Simpson, worked at this place from October 1 to November 5, 1908, dredging a cut between the piers, 500 feet of which is 60 feet wide and 550 feet is 100 feet wide; the remainder is a bell-mouthed approach to the channel, having a width at outer end of 235 feet and a length of 100 feet. Some 19,298½ cubic yards of clay, sand and mud were removed.

SESSIONAL PAPER No. 19

NEW LISKEARD.

Departmental dredge *Queen* worked at this place from June 19 to October 31, 1908, removing 29,682 cubic yards of clay. The work performed in this locality consisted in the dredging of a basin, 65 feet in width and 300 feet long, in front of the wharf. One cut, 900 feet long and 20 feet wide and one 314 feet long and 20 feet wide, was made in the channel at the elbow. These two cuts were made to a depth of 8 feet at low water. This latter work was done to remove silt that washed in from the Wabi river since dredging was done in 1907.

OWEN SOUND.

From June 2 to August 8, 1908, the dredge *Frank*, belonging to A. F. Bowman, worked in this port, dredging a cut 2,200 feet long, with an average width of 100 feet, along the easterly side of channel to harbour, and a cut, 1,800 feet long by 50 feet wide, along the westerly side of said channel, making the approach to the piers 375 feet wide, also one cut was made in front of the new revetment wall, about 450 feet long. Some 96,600 cubic yards of clay and sand were removed.

PELEE ISLAND.

From August 24 to November 21, 1908, dredge *Ontario*, belonging to the Department of Public Works, worked at this place making one cut, 275 feet long and 25 feet wide on south side of McCormick's stone quarry dock. Dredging was also done at the lighthouse marsh, making a cut from 8 feet of water at 360 feet from the beach, then, through to the line of embankment, throwing material to one side raising a bank 6 feet above water; 23,980 cubic yards of sand, clay and boulders were removed.

PENETANGUISHENE.

The dredge *Frank*, owned by A. F. Bowman, worked here from August 11 to October 20, 1908, and the dredge *Hackett*, owned by The Penetanguishene Dredging Company, from November 26 to December 1, 1908. The dredging performed at this place consisted in making a cut in the channel approaching the town wharf, some 800 feet in length by 150 feet in width, and in front of the town wharf a cut was made, some 300 feet wide and 880 feet long, also a cut was dredged at the foot of Queen street to location of proposed town wharf, 700 feet long by 75 feet wide. Some 140,713 cubic yards of clay were removed.

PICTON.

Dredge *King Edward*, belonging to the Windsor Dredging Company, worked at this place from July 14 to November 28, 1908, removing 218,000 cubic yards of mud and clay. The work at this place consisted in dredging in the approaches and in the harbour proper. A cut, 2,250 feet long with an average width of 125 feet, was dredged along the easterly side of the harbour. The southerly end of harbour was dredged the entire width and for a length of 750 feet; this area varied in width from 145 feet to 340 feet. A cut was also made on the westerly side of harbour, some 1,175 feet in length with an average width of 75 feet. Some dredging was done at the R. & O. wharf, at northerly end of harbour. The entrance to the harbour was widened and deepened.

POINT EDWARD.

The dredge *St. Lawrence*, belonging to Manley Company, worked at this place from May 9 to July 22, from August 1 to September 4 and from November 18 to 21, 1908. The dredging performed consisted in the partial removing of a middle ground

9-10 EDWARD VII., A. 1910

and providing safe depth of water along front of docks for deep draught vessels. Some 150,794 cubic yards of sand and gravel were removed.

PORT ARTHUR.

From May 9 to July 14, 1908, dredge *I.X.L.*, owned by R. Weddell, worked here completing the dredging required in Port Arthur harbour and removing 38,186 cubic yards of clay, sand and stone.

PORT BRUCE.

The dredge *E. Hall No. 1* worked at this place from September 18 to October 17, 1908, 12,835 cubic yards of clay, sand and gravel were removed. The dredging performed consisted in the removal of a sand bar which had formed between the piers, and which prevented safe ingress and egress from the harbour. Twenty-two oak piles, which had formed an obstruction on line of channel, were also removed. Work has proved very beneficial.

PORT BURWELL.

From May 13 to September 12, 1908, the dredge *E. Hall No. 1*, owned by the Canadian Construction and Dredging Co., worked at this place, making five cuts, 400 feet long, two cuts 1,000 feet long and one cut 700 feet long and 25 feet wide each, at the entrance to the piers. Work was also performed in the inner harbour, two cuts, 500 feet long, three cuts, 150 feet long, two cuts, 300 feet long and three cuts, 75 feet long were made to a width of 25 feet. All this dredging was done wherever less than 17 to 18 feet of water was found. Some 43,886 cubic yards of clay, sand and quicksand were removed.

PORT ELGIN.

From July 14 to July 31, 1908, the dredge *Arnoldi* worked at this place, dredging opposite landing dock to provide turning basin and also in channel leading to dock. Some 9,500 cubic yards of clay and sand were removed.

PORT HOPE.

The dredge *Chief*, owned by W. E. Phin, worked at this place, deepening and widening the approaches to and the space between the outer piers. The length of the area dredged is 1,065 feet, with a minimum width of 125 feet and a maximum width of 315 feet. The dredge worked here from October 15 to November 4, and from November 10 to 28, 1908, removing 52,274 cubic yards of sand, mud and clay.

PORT STANLEY.

Departmental dredge *Ontario* worked at this place from April 20 to August 22, 1908, removing 40,365 cubic yards of sand, gravel and clay. The work at this place was dredging of crib seats for new breakwater. Two and a half cuts were made, 600 feet long each to a total width of 50 feet. Three cuts were also made at north end of breakwater, 250, 225 and 180 feet long each. On each side of entrance to harbour, four cuts were made 760, 660, 575 and 450 feet long to a total width of 100 feet. Inside of harbour, on each side of west pier, two cuts were made through shoal spot, each 350 feet long and 50 feet wide. On each side of harbour to entrance of turning basin, five cuts were made, 340, 300, 300, 300 and 250 feet long and 125 feet total width. A shoal was removed on same side further north in front of the proposed dock. Three cuts were made, 200, 340 and 340 feet long, with a total width of 75 feet.

SESSIONAL PAPER No. 19

ROCKLAND.

Departmental dredge *Nipissing* worked here from August 17 to 29, 1908, removing 6,030 cubic yards of clay. The dredging consisted in deepening the channel in front of Edward's sawmill. Three cuts were made, 304, 230 and 108 feet long and 30 feet wide.

RONDEAU.

From October 30 to September 5, 1908, the dredge *Hall No. 1* owned by the Canadian Construction and Dredging Co., worked at this place removing 19,315 cubic yards of clay and sand. The dredging performed consisted in the widening of basin in inner harbour, as also dredging of small portion of channel at outer entrance to harbour. Improving of this outer channel will require urgent attention as soon as spring opens up in order to allow safe entrance for the coal boat which plies in and out of this port.

RUSCOMBE RIVER.

The dredge *Pelée*, owned by the Chatham Dredging and General Construction Company, worked here from September 3 to September 30, 1908, removing 10,403 cubic yards of clay and sand. The dredging consisted of the opening up of a channel at entrance to river, and also providing channel of sufficient depth to render this river navigable as far as St. Joachim.

The dredge *Wilcox*, also owned by the Chatham Dredging and General Construction Company, worked here assisting in the above work from September 28 to December 11, 1908, removing 38,305 cubic yards of clay.

SARNIA.

From July 13 to 15, and from July 23 to 31, 1908, dredge *St. Lawrence*, owned by the Manley Company, worked at this place, removing two shoals which formed serious obstruction in St. Clair river, opposite Sarnia; 20,768 cubic yards of clay and gravel were removed.

SAULT STE. MARIE.

Dredge *No. 1, A. F. Bowman*, worked at this place from May 20 to November 14, 1908, deepening and widening the approaches to the government wharf by the removal of shoal patches and large boulders which are scattered over the bottom of the river in said approaches; 34,334 cubic yards of boulders, sand and rock were removed.

SPANISH RIVER.

Dredge *Meade*, C. S. Boone Dredging and Construction Company, worked here from September 21 to November 14, 1908, dredging a portion of the channel, which when completed will be 6,750 feet in length by 80 feet wide at the bottom, having side slopes of 1 vertical on 3 horizontal to a depth of 12 feet below low water. This channel extends from the mouth of the river up stream through two large sand bars; 66,738 cubic yards of clay, sand and quicksand were removed.

SUMMERSTOWN.

Dredge *No. 5, R. McDonald*, worked at this place from June 4 to September 26, and from October 2 to October 14, 1908, deepening alongside the wharf, also making three cuts from the wharf to the main channel, each 900 feet long and 25 feet wide. One cut was already made in the main channel, 500 feet long and 30 feet wide; 135,300 cubic yards of hardpan, gravel and clay were removed.

9-10 EDWARD VII., A. 1910

THAMES RIVER.

Dredge *St. Lawrence*, belonging to Manley Company, worked here from September 7 to November 14, 1908, removing 61,094 cubic yards of clay and sand. The dredging performed consisted in improving the channel at entrance to the river in order to provide safe entrance.

THORNBURY.

From May 27 to July 18, and from September 12 to November 10, 1908, dredge *Togo*, belonging to R. Weddell, worked at this place, removing 64,297 cubic yards of clay, sand and gravel. The dredging consisted in the construction of a well sheltered basin as an extension of the harbour, which is now 600 feet long with a minimum width of 200 feet and a maximum width of 400 feet. Two cuts were made in the approaches to the harbour.

TIFFIN.

Dredge *Excelsior*, belonging to the Canadian Dredging and Construction Company, and Owen Sound Dredging and Construction Company, worked here from May 4 to June 27, and from September 9 to December 8, 1908, removing 97,623 cubic yards of clay, sand and rock.

From May 4 to May 30 and from July 14 to September 3, and from October 15 to 17, 1908, the dredge *Monarch*, belonging to the Canadian Dredge and Construction Company, and the Owen Sound Dredging and Construction Company, worked here, removing 81,540 cubic yards of clay, sand, gravel, boulders and rock.

This work consisted in dredging a cut 1,521.4 feet long by 240 feet in width, as a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs. The portion of the slip dredged this year consists of one cut alongside the wharf, 650 feet long by 70 feet wide, and a cut on the opposite side of the slip, at outer end, 200 feet long by 36 feet wide. The work done here this season enabled the largest grain boats in the Canadian trade to discharge their cargoes at the new elevator.

TORONTO.

Dredge *King Edward*, owned by the Windsor Dredging Company, worked at this place from May 26 to July 7, 1908, removing 43,400 cubic yards of sand. The dredging done consisted in the cleaning up and completion of the bell-mouth entrance to the Eastern channel of the harbour, making it 1,000 feet wide at outer end and narrowing to 400 feet, being the width between the piers.

VICTORIA HARBOUR.

Two dredges belonging to the Canadian Dredging and Construction Company worked at this place, the *Excelsior* from June 29 to September 1, and the *Maine* from July 28 to October 31. Two dredges, belonging to the Owen Sound Dredging and Construction Company, also worked at this place, *Monarch* from June 2 to July 11, September 4 to October 14, and from October 26 to December 8, and the *No. 9* from May 11 to December 5, 1908. Dredge *Sydenham*, belonging to the Canadian Construction Company, worked here from November 2 to December 8, 1908.

The work during 1908, at this place consisted in dredging in the channel to and the slip in front of the proposed site of the new Canadian Pacific Railway grain elevator and wharfs. The cut in the channel is 1,820 feet long by 200 feet wide. The cut in front of the wharfs and elevator site is about 300 feet wide, and 2,300 feet long, with the exception of one cut unfinished. There are two cuts 1,000 feet long by about 100 feet wide; 503,459 cubic yards of mud, clay, sand, gravel, boulders and rock were removed.

SESSIONAL PAPER No. 19

WAUBAUSHENE.

Dredge *Hackett*, belonging to the Penetanguishene Dredging Company, worked at this place from June 6 to November 24, and removed 119,625 cubic yards of clay, sand, mud and rock. The work at this place consisted in the dredging of a channel from the turning basin at Fesserton to the mouth of Coldwater river, a distance of some 7,200 feet. During the past season, a cut has been excavated the entire distance, less 600 feet at the river; 1,000 feet of the cut, beginning at the Fesserton turning basin, is 50 feet in width and the remainder is 25 feet in width. The depth is 10 feet and the object is to permit small tugs, &c., to reach Coldwater from Georgian bay ports. The turning basin at Fesserton was completed and is 300 feet long by 300 feet wide.

WIARTON.

Dredge *Frank*, belonging to A. F. Bowman, worked at this place from October 26 to December 5, 1908; 63,600 cubic yards of clay were removed. The work performed during 1908 at this place consisted in dredging a channel, 20 feet in depth by 1,150 feet in length and 150 feet in width, from the deep water in the bay to the government breakwater and town wharf, also the removal of a shoal patch, 400 feet by 75 feet between the said breakwater and the town wharf.

WINGFIELD BASIN.

C. S. Boone Dredging and Construction Company's dredge No. 1, worked at this place from June 3 to August 21, September 28 to 30 and from October 5 to November 7, 1908, removing 24,935½ cubic yards of hardpan, boulders, clay and rock. The work performed consisted in the dredging of a channel, 18 feet deep from the lake into the basin. It is to be, when completed, 100 feet wide by about 650 feet in length. The drilling is said to be finished and the dredging remaining unfinished can be done early next season.

WOLFE ISLAND.

Departmental dredge *Sir Richard* worked at this place from August 10 to October 17, 1908, 27,200 cubic yards of clay and mud were removed. Five cuts were made, 1,500 feet long each and 25 feet wide, in the main channel between the light-house and the gas buoys.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909.
DREDGE 'ARNOLDI,' OWNER, W. L. HORTON.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure. \$ cts.	Cost per Cubic Yard. Cts.
	From	To				
Goderich, Huron Co.	May 4.....	June 6.....	} 19-22 feet.	12,695	22,944 79	48 $\frac{1}{2}$
"	August 1.....	Nov. 28.....		34,715	3,156 00	35 $\frac{1}{2}$
Kincardine, Bruce Co.	June 24.....	July 9.....		9,000	2,132 85	23 $\frac{1}{2}$
Port Elgin "	July 14.....	" 31.....		9,500		

Total expenditure, \$28,233 64. Total cubic yards removed, 65,910.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	80 50	80 50	22 00	48 85	80 00	80 00	83 50	78 60			473 45
Contingencies.....	3,477 25	3,477 25	2,495 50	3,710 50	4,655 00	3,666 25	3,416 55	6,339 14			27,760 19
Totals.....	3,557 75	3,557 75	2,517 50	3,759 35	4,735 00	3,746 25	3,500 05	6,417 74			28,233 64

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay	7,130	9,435	14,130	13,300	10,475	8,020	2,920						65,910

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

GODERICH.—Dredging to enlarge turning basin in inner harbour, also excavating channel at outer entrance.
KINCARDINE.—Dredging to provide required depth.
PORT ELGIN.—Dredging opposite landing dock to provide turning basin and in channel leading to dock.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'CHIEF,' OWNER W. E. PHIN.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Burlington Channel, Halton Co.	April 30	June 5 9.	15 feet.	48,472	\$ 9,879 30	Cts. .21½
Hamilton, Wentworth Co.	June 6	" 8		2,620	7,094 36	.15½
" "	" 10	July 7	16 23 "	42,718		
Cobourg, Northumberland Co.	July 21	Oct. 15		128,371	24,675 92	.18½
" "	Nov. 5	Nov. 10	21 22 "	5,855		
Port Hope, Durham Co.	Oct. 15	" 4		27,650	11,630 73	.22½
" "	Nov. 10	" 28	14 16 "	24,624		

Total expenditure, \$53,280.31. Total cubic yards removed, 280,310.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	27 00	58 25	129 65	311 76	160 34	158 30	143 45	108 50			1,097 25
Contingencies.....	332 00	7,709 60	7,131 10	3,536 76	8,433 00	8,135 64	9,435 66	7,449 30			52,183 06
Totals.....	359 00	7,767 85	7,260 75	3,848 52	8,593 34	8,293 94	9,599 11	7,557 80			53,280 31

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....	1,660	38,548	41,786	21,068	46,850	45,198	47,275	31,925					280,310

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BURLINGTON CHANNEL.—Dredging was between the piers and in the approaches thereto from the lake.

HAMILTON.—Dredging four cuts and a turning basin.

COBOURG.—Widening and deepening the approaches to harbour, and widening and deepening the inner basin.

PORT HOPE.—Deepening and widening the approaches to and the space between the outer piers.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'DRAGON ROUGE,' OWNER, F. SIMPSON.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure. \$	Cost per Cubic Yard.
	From	To				
Rowmanville, Durham Co.	Aug. 17	Sept. 26	16 feet.	22,251	2,758 77	124 8
Newcastle	Oct. 1	Nov. 5	12 "	19,298 3	2,399 54	124 6

Total expenditure, \$5,158.31. Total cubic yards removed, 41,549 3.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages					39 00	71 90	103 00	.....	.....	.....	213 90
Contingencies					1,081 11	1,566 76	2,106 02	190 52	.....	.....	4,944 41
Totals					1,120 11	1,638 66	2,209 02	190 52	.....	.....	5,158 31

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay					9,085	13,166	17,697 3	1,601	.....	.....	.....	.....	41,549 3

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ROWMANVILLE.—Making a cut between the piers and dredging in the approaches from the lake.
NEWCASTLE.—Dredging a cut between the piers.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'EXCELSIOR.' OWNER, OWEN SOUND DREDGING AND CONSTRUCTION CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.					
	From	To									
Tilth, Simcoe Co.	May 4	May 22	17-25 feet.	18,298	\$ 5,357 42	Cts. 29 ³ / ₁₀					
Total cubic yards removed, 18,298. Cost per cubic yard, 29 ³ / ₁₀ cts.											
DETAILS OF EXPENDITURE.											
	April.	May.	June.	July.	August.	September	October.	November	December	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	51 00	51 00									51 00
	5,306 42	5,306 42									5,306 42
Totals		5,357 42									5,357 42
QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.											
	April.	May.	June.	July.	August.	September	October.	November	December	January.	Totals.
—											
Clay	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	18,298	18,298									18,298

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Tiffin. — Dredging a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'EXCELSIOR.' OWNER, CANADIAN DREDGING & CONSTRUCTION CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co.	May 23.	June 27.	17-25 feet. 23 "	79,325	\$ cts. 70,691.78	\$ cts. 1 14
Victoria Harbour, Simcoe Co.	Sept. 9.	Dec. 8.		17,970	35,737 81	0 74½
	June 29.	Sept. 1.				

Total expenditure, \$106,432.59. Total cubic yards removed, 127,295.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.	23 70	23 70	83 94	87 56	83 76	81 60	84 07	77 30	25 20	516 53	
Contingencies.	1,698 45	1,698 45	9,741 88	12,651 25	22,235 37	11,297 36	19,312 86	25,106 29	3,542 60	105,886 06	
Totals.	1,722 15	1,722 15	9,825 82	12,738 81	22,319 13	11,378 36	19,396 93	25,183 59	3,567 80	106,432 59	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.	1,305	1,305	27,347	21,620	9,151	7,490	16,863	640	640	640	640	640	95,782
Rock.	200	200	805	4,255	9,374	8,484	3,326	1,492	1,492	1,492	1,492	1,492	31,513
Totals.	4,505	4,505	28,152	25,875	18,525	15,974	11,189	2,132	2,132	2,132	2,132	2,132	127,295

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MUDLAND (Tiffin).—Dredging a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs.
VICTORIA HARBOUR.—Dredging in the channel to and the slip in front of the proposed site of the new C.P.R. grain elevator and wharfs.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE "E. HALL No. 1." OWNER, CANADIAN CONSTRUCTION & DREDGING CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From	To				
Port Burwell, Elgin Co.....	May 13.....	Sept. 12.....	19 23 fath.	43,886	16,646 94	37 22
Port Bruce, Elgin Co.....	Sept. 18.....	Oct. 17.....	10 11 "	12,835	5,846 25	45 28
Rondeau, Kent Co.....	Oct. 30.....	Dec. 5.....	20 "	19,315	6,520 43	33 34

Total expenditure, \$29,013.62. Total cubic yards removed, 76,036.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	51 00	78 00	81 00	78 00	83 50	90 98	83 75	23 00	23 00	572 23	572 23
Contingencies.....	2,933 08	4,520 88	4,938 18	2,877 63	2,978 27	4,491 65	5,091 90	587 40	587 40	28,411 39	28,411 39
Totals.....	3,007 08	4,598 88	5,019 18	2,955 63	3,061 77	4,582 63	5,175 65	610 40	610 40	29,013 62	29,013 62

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel.....	11,592	12,662	7,377	9,918	9,705	15,430	1,780						76,036

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT BURWELL.—At the entrance to the piers. Work was also performed in the inner harbour.

PORT BRUCE.—Removal of a sand bar which had formed between the piers.

RONDEAU.—Widening of basin in inner harbour, and dredging of small portion of channel at outer entrance to harbour.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'FRANK,' OWNER, A. F. BOWMAN.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Owen Sound, Grey Co., ...	June 2.	Aug. 8.	20 feet—23 feet.	96,600	\$ cts.	Cts.
Penetanguishene, Simcoe Co.	Aug. 11.	Oct. 20.	17 feet—20 feet.	135,000	24,338 50	29 9/10
Warton, Bruce Co.	Oct. 26.	Dec. 5.	" "	63,600	25,850 00	19 5/8
					15,372 52	24 1/2

Total expenditure, \$65,561.62. Total cubic yards removed, 295,200.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			79 00	81 00	87 10	79 50	77 50	75 40	18 12		497 62
Contingencies.....			10,000 00	11,400 00	10,350 00	10,944 00	9,266 00	10,704 00	2,400 00		65,064 00
Totals.....			10,079 00	11,481 00	10,437 10	11,023 50	9,343 50	10,779 40	2,418 12		65,561 62

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.....			40,000	45,600	51,000	57,600	46,400	44,600	10,000				295,200

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

OWEN SOUND—Dredging a cut along the easterly side of channel to harbour, and a cut along the westerly side of said channel.
 PENETANGUISHENE—Making a cut in the channel approaching town wharf, and in front of town wharf a cut was made; also a cut was dredged at foot of Queen Street.
 WARTON—Dredging a channel from deep water in the Bay to the Government breakwater and town wharf; also the removal of a shoal.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1905—Continued.
DREDGE 'HACKETT,' OWNER, PENETANGUISHENE DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Waubesaene, Simeco Co.	June 6.	Nov. 24.	10 feet—14 feet.	119,625	\$ cts.	Cts.
Penetanguishene, Simeco Co.	Nov. 26.	Dec. 1.	12 feet.	5,713	21,901 51 1,985 47	18 7/8 19

Total expenditure, \$22,986.98. Total cubic yards removed, 125,338.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.			80 90	81 00	82 50	78 00	36 62	51 79			410 81
Contingencies.			2,884 50	2,771 25	4,464 00	3,465 00	2,445 95	6,379 75	225 72		22,576 17
Totals.			2,965 40	2,792 25	4,546 50	3,543 00	2,482 57	6,431 54	225 72		22,986 98

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand and mud	19,230	18,075	29,760	23,100	16,110	16,825	1,188						124,288
Rock.						1,050							1,050
Totals.	19,230	18,075	29,760	23,100	16,110	17,875	1,188						125,338

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

WAUBESAENE—Dredging of a channel from the turning basin at Fesserton to the mouth of the Coldwater River. The turning basin at Fesserton was completed.

PENETANGUISHENE—Dredging at proposed town wharf.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE "HAMIL," OWNER, W. E. PHIN.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Hamilton.....	July 28.....	Nov. 30.....	16 feet.....	99,129	\$ cts. 15,515 96	cts. 15½

Total expenditure, \$15,515.96. Total cubic yards removed, 99,129. Cost per cubic yard, 15½ cents.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....				\$ cts. 9 00	\$ cts. 159 36	\$ cts. 160 65	\$ cts. 164 00	\$ cts. 153 60			\$ cts. 646 61
Contingencies.....				608 40	4,093 35	3,416 40	3,915 60	2,925 00			14,869 35
Totals.....				617 40	4,163 31	3,577 05	4,079 60	3,078 60			15,515 96

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and sand.....				Cub. yds. 4,056	Cub. yds. 26,693	Cub. yds. 22,776	Cub. yds. 26,104	Cub. yds. 19,500					Cub. yds. 99,129

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

HAMILTON—Dredging a cut to the easterly side of channel. A cut was also made alongside the Turbinia wharf; also a berth adjoining the easterly side of the city wharf, and two cuts in front of the revetment wall.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'L. N. L.' OWNER, R. WEDDELL

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port Arthur Harbour, Thunder Bay Co.	May 9 ..	July 4 ..	22 feet ..	38,186	\$ cts. 3,839 67	cts. 10

Total expenditure, \$3,839.67. Total cubic yards removed, 38,186. Cost per cubic yard, 10 cents.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages		\$ cts. 84 00	\$ cts. 104 00	\$ cts. 24 00							\$ cts. 212 00
Contingencies		1,483 71	1,829 89	314 67							3,627 67
Totals		1,567 71	1,933 89	338 67							3,839 67

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and sand.		Cub. yds. 15,618	Cub. yds. 19,262	Cub. yds. 3,306									Cub. yds. 38,186

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR—The work consisted in the completion of the dredging required in Port Arthur harbour.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'KINGSFORD.' OWNER, C. S. BOONE DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Collingwood, Simcoe Co.	April 28	November 7.....	12-22 feet.	52,410	\$ 50,694 72	Cts. 96 $\frac{1}{2}$

Total expenditure, \$50,694.72. Total cubic yards removed, 52,410.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	24 00	98 15	91 00	97 15	95 55	93 26	96 89	60 12	.....	.....	656 12
Contingencies	781 80	7,663 75	9,538 40	6,439 95	6,669 30	10,928 30	5,928 50	2,086 50	.....	.....	50,098 60
Totals.....	808 80	7,761 90	9,629 40	6,536 20	6,764 85	11,021 56	6,025 39	2,146 62	.....	.....	50,694 72

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Hard pan, ...	9,647	5,790	5,790	7,975	8,718	2,770	5,220	3,120	.....	.....	.....	.....	43,240
Sand, mud and rock.....	360	190	2,390	210	60	4,060	1,575	325	.....	.....	.....	.....	9,170
Totals.....	360	9,837	8,180	8,185	8,778	6,830	6,795	3,445	.....	.....	.....	.....	52,410

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

COLLINGWOOD—Deepening of the main channel, where necessary, also dredging to 12 feet between the elevator wharf and the old pier of eastern breakwater.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE 'KING EDWARD,' OWNER, WINDSOR DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Toronto, York Co.	May 26	July 7	25 feet.	43,400	\$ cts., 8,581 00	Cts., 19½
Pictou, Prince Edward Co.	July 14.	November 28 ...	13 feet.	218,000	26,528 63	12½

Total expenditure, \$35,109.63. Total cubic yards removed, 261,400.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.,	\$ cts.
Wages	18 00	78 00	72 67	80 24	83 24	80 24	74 25	486 63	.....	.....	486 63
Contingencies.	1,248 00	5,694 00	4,809 00	6,240 00	5,424 00	5,424 00	5,736 00	34,623 00	.....	.....	34,623 00
Totals.....	1,266 00	5,772 00	4,881 67	6,320 24	5,555 24	5,504 24	5,810 24	35,109 63	.....	.....	35,109 63

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand and mud....	.....	6,400	29,200	35,200	52,000	45,200	45,600	47,800	.....	.....	.....	.....	261,400

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TORONTO—Dredging done, cleaning up and completion of the bell mouth entrance to the eastern channel of the harbour.

PICTON—Dredging in the approaches and in the harbour proper.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'MEADE,' OWNER, C. S. BOONE DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Little Current, Algoma Co.....	April 22	May 30	22 feet.	14,991	\$ 13,510 72	90 ³ / ₁₆ cts.
Blind River, "	June 8	Sept. 8	15 "	81,171 ¹ / ₂	18,936 39	23 ³ / ₈ cts.
Spanish River, "	Sept. 21	Nov. 14	12 "	66,738	16,909 25	25 ³ / ₈ cts.

Total expenditure, \$49,356.36. Total cubic yards removed, 162,900 ¹/₂.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	10 00	39 00	47 05	100 90	91 00	109 00	80 75	43 00	.....	.....	520 70
Contingencies.....	4,355 92	9,075 80	4,516 64	6,583 63	5,607 89	5,229 03	9,501 75	3,845 00	.....	.....	48,835 66
Totals.....	4,365 92	9,114 80	4,593 69	6,684 53	5,758 89	5,338 03	9,582 50	3,888 00	.....	.....	49,356 36

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, quicksand and mud.....	1,584	7,058	19,768	28,624 ¹ / ₂	28,624 ¹ / ₂	21,643	21,567	38,007	15,300	.....	.....	.....	156,551 ¹ / ₂
Rock	6,349	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,349
Totals.....	1,584	13,407	19,768	28,624 ¹ / ₂	28,624 ¹ / ₂	21,643	21,567	38,007	15,300	.....	.....	.....	162,900 ¹ / ₂

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT—Continuation of the drilling and blasting and dredging of a channel 300 ft. in width by about 1,800 ft. in length to a depth of 22 ft. below low water.
BLIND RIVER—Deepening and widening of the channel and approaches to the new Government wharf and deepening the turning basin at the wharf.
SPANISH RIVER—Dredging of a portion of the channel.

9-10 EDWARD VII., A. 1910

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
 DREDGE 'MONARCH' OWNER, OWEN SOUND DREDGING AND CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co	May 4	May 23	23-25 feet.	31,200	\$ cts. 9,748 29	Cts. 28½

Total expenditure, \$9,748.29. Total cubic yards removed, 31,200.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts. 56 49	\$ cts. 9,691 80	\$ cts. ...	\$ cts. ...	\$ cts. ...	\$ cts. ...	\$ cts. ...	\$ cts. ...	\$ cts. ...	\$ cts. 56 49	\$ cts. 9,691 80
Contingencies.....	...	...	...	...	...	...	...	...	...	...	...
Totals.....	...	9,748 29	...	...	...	...	...	...	...	...	9,748 29

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay, sand, gravel and boulders.....	Cub. yds. 34,200	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. ...	Cub. yds. 34,200

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TIFFIN—(See Dredge 'Monarch' Canadian Construction and Dredging Co.)

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE, 'MONARCH,' OWNER, CANADIAN DREDGE & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Tiffin, Simcoe Co.....	May 25..... July 14..... Oct. 15..... June 2..... Sept. 4..... Oct. 26.....	May 30..... Sept. 3..... Oct. 17..... July 11..... Oct. 14..... Dec. 8.....	14-25 feet.	47,340	\$ 36,848 11	\$ 0 77½
Victoria Harbour, Simcoe Co.....			18-23 feet.	145,500	68,456 29	0 47
Total expenditure, \$105,304. 40. Total cubic yards removed, 192,840.						

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages.....		18 00			82 68	83 83	80 84				81 40	83 84			77 84		22 16				530 59	
Contingencies.....		1,550 52		1,550 52	10,542 50	16,021 50	22,247 12				12,548 75	15,057 17			21,908 75		4,897 50				104,773 81	
Totals.....				1,568 52	10,625 18	16,105 33	22,227 96				12,630 15	15,141 01			21,986 59		4,919 66				105,304 40	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Boulders and sand.....	4,008		38,685		14,203		13,940		8,645		16,690		300		10,690		300								157,761	
Rock.....	72		3,855		8,057		4,730		6,115		8,810		2,160												35,079	
Totals.....		4,080		42,540		22,260		18,660		14,760		25,500		2,400											192,840	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TIFFIN—Dredging a channel to the slip in front of the new Grand Trunk Pacific elevator and wharfs.
VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
 DREDGE, 'MAINE,' OWNER, CANADIAN DREDGE & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zoro.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Sincove Co.	July 28, ...	Oct. 31, ...	22 feet.	120,366	\$ cts. 26,074 16	\$ cts. 0 21 ³³ / ₁₀₀
Total cubic yards removed, 120,366. Cost per cubic yard, .21 ³³ / ₁₀₀ .						

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages, .....	.....	.....	.....	12 00	46 27	41 43	81 84	.....	.....	.....	184 51
Contingencies .....	.....	.....	.....	486 00	5,633 25	12,531 75	6,985 62	.....	.....	.....	25,889 62
Totals.....	.....	.....	.....	498 00	5,979 52	12,576 18	7,020 46	.....	.....	.....	26,074 16

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, clay, sand and boulders, .....	.....	.....	.....	3,888	47,466	15,714	48,195	.....	.....	.....	.....	.....	115,263
Rock.....	.....	.....	.....	.....	.....	4,698	405	.....	.....	.....	.....	.....	5,103
Totals.....	.....	.....	.....	3,888	47,466	20,412	48,600	.....	.....	.....	.....	.....	120,366

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE, 'No. 1.' OWNER, A. F. BOWMAN.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Sault Ste. Marie, Algoma Co.	May 20	Nov. 14.....	21 feet.	34,334	\$ cts. 84,399 15	\$ cts. 2 45½
Total expenditure, \$84,399 15.	Total cubic yards removed, 34,334.		Cost per cubic yard, \$2 45½.			

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
—											
Wages.....		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....			81 34	80 89	80 32	80 89	83 82	46 12	.....	.....	453 38
			10,080 54	12,633 75	15,835 29	13,973 73	18,583 93	12,832 53	.....	.....	83,945 77
Totals			10,167 88	12,714 64	15,915 61	14,054 62	18,667 75	12,878 65	.....	.....	84,399 15

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
—													
Boulders.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand	542	548	416	.....	.....	229	114	221	.....	.....	.....	.....	2,061
Rock.....	1,975	2,062	1,595	759	950	759	534	274	.....	.....	.....	.....	8,149
	111	2,568	3,524	4,091	4,194	3,919	5,717	3,919	.....	.....	.....	.....	24,134
Totals.....	.....	2,628	5,178	5,535	5,041	5,173	6,365	4,414	.....	.....	.....	.....	34,334

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SAULT STE. MARIE—The dredging, deepening and widening the approaches to the Government wharf.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE, 'No. 2.' OWNER, CANADIAN DREDGE & CONSTRUCTION CO.

Localities where dredging was Performed	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Simcoe Co.....	May 23	December 5 ...	22 feet.	116,100	\$ cts. 14,975 99	Cts. 127 ² / ₃
Total expenditure, \$14,975.99.	Total cubic yards removed, 116,100.		Cost per cubic yard, .127 ² / ₃ .			

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	29 99	29 99	82 86	71 67	46 27	41 41	74 34	53 21	23 68	463 49	
Contingencies.....	675 00	575 00	1,562 50	2,775 00	2,450 00	2,612 50	2,512 50	1,775 00	250 00	14,512 50	
Totals.....	604 99	604 99	1,645 36	2,846 67	2,496 27	2,653 94	2,586 84	1,868 24	273 68	14,975 99	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Roulders, clay, sand and mud	4,600	12,500	22,200	19,600	20,900	20,100	2,000	14,200	2,000	.....	.....	.....	116,100

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C. P. R. grain elevator and wharfs.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'No. 9.' OWNER, OWEN SOUND DREDGING & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Victoria Harbour, Simcoe Co.	May 11	May 22	22 feet.	6,050	\$ cts. 789 25	Cts. 13

Total expenditure, \$789.25. Total cubic yards removed, 6,050. Cost per cubic yard, 13.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages		33 00									33 00
Contingencies		756 25									756 25
Totals		789 25									789 25

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and mud		6,050											6,050

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
VICTORIA HARBOUR. —See Dredge 'No. 9' Canadian Construction & Dredging Co.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE 'No. 5.' OWNER, R. McDONALD.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Summerstown, Glengarry Co.	{ June 4. (October 2.	September 26. October 14.	8-14 feet.	116,100 19,200 }	\$ cts. 31,352 70	Cts. .23 $\frac{3}{4}$

Total expenditure, \$31,352.70.

Total cubic yards removed, 135,300.

Cost per cubic yard, 23 $\frac{3}{4}$ cts.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	57 50	.....	57 00	69 00	36 20	.....	.....	.....	219 70
Contingencies.....	.....	.....	8,406 50	2,898 00	6,940 50	8,529 50	4,416 00	.....	.....	.....	31,133 00
Totals.....	.....	.....	8,406 50	2,898 00	6,997 50	8,598 50	4,432 20	.....	.....	.....	31,352 70

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan and clay... ..	.....	.....	36,300	12,600	30,150	37,050	19,200	.....	.....	.....	.....	.....	135,300

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SUMMERSTOWN.—Deepening alongside the wharf also making three cuts from wharf to the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE 'No. 1.' OWNER, C. S. BOONE DREDGING & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Wingfield Basin, Wellington Co.....	June 3.....	Aug. 21.....	18 feet.	24,935½	\$ cts. 32,425 01	\$ Cts. 1 30
" " ".....	Sept. 28.....	Sept. 30.....				
" " ".....	Oct. 5.....	Nov. 7.....				
Lion's Head, Bruce Co.....	Aug. 24.....	Sept. 26.....	14 feet.	14,135½	2,928 90	20½¢
Total expenditure, \$35,353.91.	Total cubic yards removed, 39,071.					

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			78 00	83 00	99 56	161 84	81 00				503 40
Contingencies.....			6,289 14	6,101 64	3,412 03	3,327 70	13,521 00	2,199 00			34,850 51
Totals.....			6,367 14	6,184 64	3,511 59	3,489 54	13,602 00	2,199 00			35,353 91

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay, hardpan and boulders	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	.....	.....	8,063	7,723	6,495½	11,549½	4,507	733	733	.....	.....	.....	33,420½ 5,650½ 39,071

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

WINGFIELD BASIN.—Dredging of a channel from the lake into the basin.

LIONS HEAD.—Widening and deepening the harbour by adding a cut to the southwesterly side. *

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'No. 14.' OWNER, C. S. BOONE DREDGING & CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Little Current, Algoma Co.....	April 23.....	Nov. 14.....	22 feet.	106,854	\$ cts. 190,703 90	\$ cts. 1 78 ³ / ₄
Total expenditure, \$190,703.90.		Total cubic yards removed, 106,854. Cost per cubic yard \$1.78 ³ / ₄ .				

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	11 00	39 00	78 00	88 40	78 00	70 46	84 34	54 58			503 78
Contingencies.....	6,664 32	31,303 08	29,370 00	37,647 00	27,234 00	27,436 92	24,470 55	6,074 25			190,200 12
Totals	6,675 32	31,342 08	29,448 00	37,735 40	27,312 00	27,507 38	24,554 89	6,128 83			190,703 90

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rock.....	3,744	17,586	16,500	21,150	15,300	15,414	13,757 ¹ / ₂	3,412 ¹ / ₂					106,854

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT.—Continuation of the drilling and blasting and dredging of a channel 300 feet in width by about 1,800 feet in length to a depth of 22 feet below low water.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908 to March 31, 1909 —Continued.
DREDGE 'No. 5,' 'No. 8,' 'No. 6,' 'No. 15,' AND 'DOMINION.' OWNER GREAT LAKES DREDGING CO.

Localities where Dredging was Performed.	Date.		Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To			
Mission and Kaministiquia Rivers (No. 8) in Thunder Bay Co. (Dominion)	May 4.....	December 1.....	64,883	\$ 169,261 38	cts. 16 $\frac{1}{2}$
" " " " " "	May 9.....	December 5.....	1,032,723	129,183 10	11 $\frac{1}{2}$
" " " " " "	May 7.....	September 5.....	252,570	25,221 44	69 $\frac{1}{2}$
" " " " " "	September 7.....	December 3.....	133,810	38,050 64	29
" " " " " "	April 23.....	December 4.....	794,895	102,926 96	12 $\frac{1}{2}$

Total expenditure, \$895,643.52.

Total cubic yards removed, 2,858,881.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	169 00	596 00	728 00	756 00	728 00	744 99	761 60	591 60	84 00	5,153 10	5,153 10
Contingencies.....	707 16	35,811 33	47,180 41	56,932 61	65,024 98	78,194 94	61,121 22	43,833 68	1,664 09	390,490 42	390,490 42
Totals.....	867 16	36,407 33	47,908 41	57,708 61	65,752 98	78,939 84	61,882 82	44,428 28	1,748 09	395,643 52	395,643 52

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
No. 5.....	5,893	90,435	192,503	122,411	129,407	149,396	100,219	88,998	5,633	794,895	794,895	794,895	794,895
" 8.....	63,722	69,722	93,125	127,618	84,620	53,064	112,592	75,859	1,184	623,744	623,744	623,744	623,744
" 6.....	40,741	43,546	79,097	85,298	85,298	3,558	.....	.....	.....	252,570	252,570	252,570	252,570
Clay.....	87,861	135,913	154,587	152,905	164,146	182,376	149,824	5,111	3,458	1,032,723	1,032,723	1,032,723	1,032,723
" Dominion.....	.....	.....	.....	24,666	56,182	37,284	.....	.....	.....	121,590	121,590	121,590	121,590
No. 15.....	.....	.....	.....	6,979	1,774	3,467	.....	.....	.....	12,220	12,220	12,220	12,220
" 8.....	.....	.....	4,851	10,587	5,651	.....	.....	.....	.....	21,689	21,689	21,689	21,689
Totals.....	5,893	288,759	381,087	483,713	491,555	458,794	355,432	15,386	.....	2,858,881	2,858,881	2,858,881	2,858,881

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Work was done in the Kaministiquia, McKellar and Mission Rivers.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'No. 6,' OWNER, GREAT LAKES DREDGING CO.

Localities where Dredging was Performed.	Date.		Depth of Water, made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Nepigon River, Thunder Bay Co.,.....	September 8.....	December 5.....	19 feet.	238,826	\$ cts. 111,240 95	cts. 46½

Total expenditure, \$111,240.95. Total cubic yards removed, 238,826. Cost per cubic yard, 46½.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	.....	.....	.....	.....	.....	105 00	158 75	119 05	29 00	.....	411 80
	.....	.....	.....	.....	.....	27,459 45	40,850 55	39,161 70	3,357 45	.....	110,829 15
Totals .....	.....	.....	.....	.....	.....	27,564 45	41,009 30	39,280 75	3,386 45	.....	111,240 95

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
—	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand.....	.....	.....	.....	.....	.....	61,021	90,779	79,565	7,461	.....	.....	.....	238,826

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NEPAGON RIVER—Dredging consisted in making a channel 1,716 feet long and 150 feet wide.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
 DREDGE "PELEE" OWNER CHATHAM DREDGING AND GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Ruscombe River, Essex Co.....	September 3, ...	September 30,....	6 feet.	10,403	\$ 1,921 92	cts. 182 ³ / ₁₀₀

Total expenditure, \$1,921.92. Total cubic yards removed, 10,403. Cost per cubic yard, 182³/₁₀₀.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	.....	.....	.....	4f 00	.....	.....	.....	.....	.....
Contingencies.....	.....	.....	.....	.....	.....	1,875 92	.....	.....	.....	.....	.....
Totals .....	.....	.....	.....	.....	.....	1,921 92	.....	.....	.....	.....	.....

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....	.....	.....	.....	.....	.....	10,403	.....	.....	.....	.....	.....	.....	10,403

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RUSCOMBE RIVER—Opening up of channel at entrance to river, and providing channel as far as St. Joachim.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'SYDENHAM' OWNER, CANADIAN CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Victoria Harbour, Simcoe Co.....	Nov. 2.....	Dec. 8.....	22 feet.	67,473	\$ cts. 8,539 62	cts. .121 $\frac{3}{4}$
Total cubic yards removed, 67,473. Cost per cubic yard, '121 $\frac{3}{4}$ cts. Total expenditure, \$8,539.62.						

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	.....	.....	.....	.....	.....	.....	.....	77 36	28 14	.....	105 50
Totals .....	.....	.....	.....	.....	.....	.....	.....	6,976 12	1,458 00	.....	8,434 12
								7,053 48	1,486 14		8,539 62

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
Gravel, sand and clay.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	.....	.....	.....	.....	.....	55,809	11,664	.....	.....	.....	67,473

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
VICTORIA HARBOUR—Dredging in the channel to and the slip in front of the proposed site of the new C.P.R. grain elevator and wharfs.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE "ST. LAWRENCE," OWNER, MANLEY CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Point Edward, Lambton Co.	May 9	July 22	22 feet.	150,794	\$ cts. 27,435 50	Cts. 18 5/8
" " "	August 1	September 4				
" " "	November 18	November 21				
Sarnia, Lambton Co.	July 13	July 15	23 feet.	20,768	3,473 99	16 1/2
" " "	July 23	July 31				
Thames River, Middlesex Co.	September 7	November 14	11 feet.	61,094	12,455 72	20 1/8

Total expenditure, \$43,365.21. Total cubic yards removed, 232,656.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
			\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages		54 00	78 00	83 75	78 00	73 54	67 50	57 34	.....	.....	492 13
Contingencies		4,537 80	7,857 36	8,221 56	7,788 24	5,464 15	6,226 10	2,777 87	.....	.....	42,873 08
Totals		4,591 80	7,935 36	8,305 31	7,866 24	5,537 69	6,293 60	2,835 21	.....	.....	43,365 21

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay, gravel and sand	Cub. Yds. 25,210	Cub. yds. 47,342	Cub. yds. 43,208	Cub. yds. 27,910	Cub. yds. 30,966	Cub. yds. 14,308	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds. 232,656

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

POINT EDWARD.—Removing of middle ground and providing safe depth of water along front of docks.

SARNIA.—Removal of two shoals opposite Sarnia.

RIVER THAMES.—Improving of channel at entrance to river.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'TOGO.' OWNER, R. WEDDELL.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Thornbury, Grey Co.	May 27	July 18	16 feet.	32,590	} \$ cts. 22,147 28 8,245 77	Cts. 34½ 34½
" "	September 12	November 10	16 "	31,707		
Meaford "	July 20	September 5	21-22 "	23,668		

Total expenditure, \$30,393.65 Total cubic yards removed, 87,965.

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages	10	00	732	70	67	50	131	60	80	32	96	03	75	00	24	50					481	95
Contingencies					6,191	74	4,666	16	6,287	96	4,732	64	5,621	56	1,615	34					29,908	10
Totals			742	70	6,259	24	4,797	76	6,368	28	4,888	67	5,696	56	1,639	84					30,393	65

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan, clay, sand & mud	2,155	18,211	13,724	18,494	14,096	16,534	4,751																		87,965	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THORNBURY.—Construction of a well-sheltered basin as an extension of the harbour.
MEAFORD.—Removal of the material in front of the new revetment wall, and deepening the westerly side of the harbour.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'TRENTON.' OWNER, R. WEDDELL.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.					
	From	To									
Dark Channel, Hastings Co.	June 5.	November 7.	14 feet.	154,945	41,092 56	Cts. 26½					
Total cubic yards removed, 154,945. Cost per cubic yard, 26½¢.											
DETAILS OF EXPENDITURE.											
—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .....	.....	52 00	69 70	83 38	80 26	80 24	83 26	.....	.....	.....	448 81
Contingencies .....	.....	.....	5,540 11	7,229 23	8,595 60	8,719 10	8,521 15	2,038 53	.....	.....	40,643 72
Totals.....	.....	52 00	5,609 81	7,312 61	8,675 86	8,799 34	8,604 41	2,038 53	.....	.....	41,092 56
QUANTITIES AND DESCRIPTIONS OF MATERIAL DREDGED.											
—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, clay, clay and stone, sand and mud.....	.....	.....	21,056½	27,181¾	33,060	33,535	32,395	7,600	.....	.....	154,828½
Rock.....	.....	.....	33½	83¾	.....	.....	.....	.....	.....	.....	116½
Totals.....	.....	.....	21,090	27,265	33,060	33,535	32,395	7,600	.....	.....	154,945

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
DARK CHANNEL.—Continuation of the excavation of the channel leading from the Murray Canal to Trenton harbour.

9-10 EDWARD VII., A. 1910

Annual Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'WILCOX,' OWNER, CHATHAM DREDGING AND GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From.	To				
Ruscombe River, Essex Co.....	September 28.....	December 11.....	6 feet	38,305	\$ 4,078 10	Cts. 10½

Total expenditure, \$4,078.10. Total cubic yards removed, 38,305. Cost per cubic yard, 10½¢.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies. . .	259 00					9 00	47 50	62 50	25 00		144 00
						259 00	1,022 40	2,197 00	455 70		3,934 10
Totals.....						268 00	1,069 90	2,259 50	480 70		4,078 10

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
						1,554	10,224	21,970	4,557				38,305

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RUSCOMBE RIVER.—Opening up of a channel at entrance to river, and providing channel of sufficient depth to render this river navigable as far as St. Jochian.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'CANADA' OWNER, DOMINION DREDGING CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Vandrevil, Vandrevil Co	June 29	Sept. 26	9 11 feet.	83,308	\$ cts. 18,647 23	Cts. 22½%
Total expenditure, \$18,647.23.	Total cubic yards removed, 83,308.		Cost per cubic yard, 22½%.			

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	81 00	81 00	78 00	78 00	78 00	78 00	78 00	78 00	78 00	78 00	261 00
Contingencies	2,313 52	2,313 52	7,169 36	5,061 71	5,061 71	3,838 61	3,838 61	3,838 61	3,838 61	3,838 61	18,383 23
Totals	2,394 52	2,394 52	7,250 36	5,139 74	5,139 74	3,916 61	3,916 61	3,916 61	3,916 61	3,916 61	18,647 23

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay	10,516	32,588	22,816	17,388	17,388	17,388	17,388	17,388	17,388	17,388	17,388	17,388	83,308

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VANDREVIL.—Four cuts were made along the front of the wharf; two other cuts were made from the wharf towards the main channel.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE, 'ALGONQUIN,' OWNER, GENERAL CONSTRUCTION CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Chicotimi, Chicoutimi Co.	July 18.	Nov. 14.	15-18 feet.	64,615	\$ cts. 23,291 17	Cts. 36

Total expenditure, \$23,291.17. Total cubic yards removed, 64,615. Cost per cubic yard, .36c.
DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages					130 00	136 00	135 00	45 00			440 00
Contingencies				3,245 12	5,802 70	5,551 60	6,797 75	1,454 00			22,851 17
Totals				3,245 12	5,432 70	5,681 60	6,932 75	1,499 00			23,291 17

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel and sand....					16,780	16,060	17,390	4,400					64,615

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

CHICOUTIMI.—Dredging was done at the wharf. The site for the extension of the wharf was dredged to 15 feet, and the approach to the wharf to 22 feet.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*

DREDGE, 'CENTRAL CITY,' OWNER, L. COLLEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
St. Placide, Two Mountains Co.,	June 1, ...	Nov. 25, ...	9 feet.	151,955	\$ 33,270 01	Cts. 21 $\frac{3}{4}$

Total expenditure, \$33,270.01. Total cubic yards removed, 151,955. Cost per cubic yard, 21 $\frac{3}{4}$ ¢.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Stores and equipment.....	78 00	78 00	78 00	81 00	78 00	78 00	81 00	63 00	.....	.....	537 00
Repairs.....	19 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	19 50
Contingencies	4 03	.....	5,144 95	5,208 48	4,861 55	5,620 10	7,031 53	4,842 87	.....	.....	32,709 48
Totals .....	.....	101 53	5,222 95	5,289 48	4,939 55	5,698 10	7,112 53	4,905 87	.....	.....	33,270 01

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay and stones	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
.....	23,930	24,145	22,575	26,140	32,640	22,525	.....	.....	.....	.....	.....	.....	151,955

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

St. Placide.—Making several cuts around the wharf, also making a cut from the main channel to the wharf.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGER, 'CANADA,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Dorion, Vaudreuil Co.....	Oct. 5.....	Nov. 26.....	10 feet.	5,215	\$ 20,489 50	\$ cts. 3 92 ² / ₃

Total expenditure, \$20,489.50. Total cubic yards removed, 5,215. Cost per cubic yard, \$3.92²/₃c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages, ...							81 00	70 00			151 00
Contingencies							10,198 50	10,140 00			20,338 50
Totals.....							10,279 50	10,210 00			20,489 50

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Rock							2,615	2,600					5,215

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

DORION.—A cut 500 feet long and 30 feet wide to make an approach to the basin.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'CHATEAUGUAY,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Maskinonge River, Maskinonge Co.	May 28	October 10	8 feet.	66,945	\$ 21,546 27	Cts. 32 ½

Total expenditure, \$21,546 27. Total cubic yards removed, 66,945. Cost per cubic yard, 32 ½ c.

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February, and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages.....		5 00		118 63		65 00		67 50		65 00		65 00		25 00		65 00		25 00		25 00		292 50
Contingencies.....						3,498 72		4,841 80		5,850 49		5,401 77		1,542 36		1,542 36		1,542 36		1,542 36		21,253 77
Totals.....		123 63		123 63		3,563 72		4,909 30		5,915 49		5,466 77		1,542 36		1,542 36		1,542 36		1,542 36		21,546 27

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Clay and Sand.....	365		10,745		15,031		18,869		17,098		4,837		4,837		4,837		4,837		4,837		4,837		4,837		66,945	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MASKINONGE RIVER.—Dredging three miles below the village and consisted in deepening and widening the channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report, from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'CAPITAL' OWNER, TURCOTTE & DUFRESNE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Batiscan, Champlain Co.....	May 27 ..	Nov. 4	6—8 feet.	108,333	\$ cts. 18,821 39	Cts. 17 ⁹ / ₁₀

Total expenditure, \$18,821.39. Total cubic yards removed, 108,333. Cost per cubic yard, 17 ⁹/₁₀ c.

DETAILS OF EXPENDITURE.

—	April.	May.	June.	July.	August.	September	October.	November	December	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	10 65	10 65	72 50	81 55	81 70	78 95	81 00	14 32	.....	.....	423 67
Contingencies.....	114 24	114 24	3,564 56	2,962 98	3,286 50	3,600 56	4,448 48	360 40	.....	.....	18,397 72
Totals.....	.....	124 89	3,637 06	3,044 53	3,371 20	3,739 51	4,529 48	374 72	.....	.....	18,821 39

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September	October.	November	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand.....	672	17,312	20,908	18,813	21,504	26,144	2,920	.....	.....	.....	.....	.....	108,333

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER BATISCAN.—Making a cut at the mouth of the river from the main channel to the mill, and widening and deepening the channel above C.P.R. bridge.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE, 'DUKE OF YORK,' OWNER, W. J. FOURTRE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River St. Francis, Yankaska Co.....	May 8, ...	Dec. 5.....	7-8 feet.	202,419	\$ 37,010 88	Cts. 18 $\frac{7}{8}$

Total expenditure, \$37,010.88. Total cubic yards removed, 202,419. Cost per cubic yard, 18 $\frac{7}{8}$ c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....		56 75	76 85	70 35	70 53	68 50	81 50	.....	.....	.....	427 48
Stores and equipment.....					32 00	.....	.....	.....	.....	.....	32 00
Pilotage and Towage.....		5,222 70	5,410 53	3,474 10	5,791 42	5,499 36	6,069 15	4,636 44	345 60	.....	36,452 40
Contingencies.....											
Totals.....		5,279 45	5,487 48	3,514 45	5,896 95	5,666 86	6,153 65	4,636 41	345 60	.....	37,010 88

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Boulders, gravel, clay and sand.....	29,015	19,923	32,572	19,923	29,175	30,552	33,504	25,758	1,920	.....	.....	.....	202,419

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

River St. Francis.—Making two cuts in front of the wharf. One other cut in front of the proposed wharf. One cut in the main channel opposite Tourville Mills. One more cut from the proposed wharf at Abenaki Springs, to the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'HURON,' OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Jesus, Hochelaga Co.....	June 18	November 14. ...	8 feet.	52,636	\$ cts. 15,672 63	Cts. 29½

Total expenditure, \$15,672 63. Total cubic yards removed, 52,636. Cost per cubic yard, 29½c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....			42 00	83 49	78 00	78 00	84 70	42 00	.....	.....	408 19
Contingencies.....			730 80	2,991 35	2,975 63	2,357 80	3,654 00	2,354 80	.....	.....	15,264 44
Totals.....			772 80	3,074 84	3,053 63	2,635 80	3,738 70	2,396 80	.....	.....	15,672 63

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Hardpan, boulders and clay.....			2,520	10,315	10,261	8,820	12,600	8,120	.....	.....	.....	.....	52,636

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
River Jesus.—Making a channel from the wharf towards river Masouche.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE, 'HERCULES,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Dorion, Vaudreuil Co.	June 1.	June 15.	5 feet	4,480	\$ cts. 1,607 00	Cts. .37 ½
Becancour, Nicolet Co.	June 29.	Nov. 17.	10-12 feet	86,262	15,061 09	.17 ½

Total expenditure, \$16,608 09. Total cubic yards removed, 90,742.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.	\$ cts.	\$ cts.	\$ cts. 45 00	\$ cts. 80 95	\$ cts. 65 00	\$ cts. 77 50	\$ cts. 70 90	\$ cts. 36 20	\$ cts.	\$ cts.	\$ cts. 375 55
Contingencies. ....	.....	.....	1,639 58	3,570 68	3,468 68	2,874 70	3,039 60	1,579 30	.....	.....	16,252 54
Totals. ....	.....	.....	1,744 58	3,651 63	3,533 68	2,952 20	3,110 50	1,615 50	.....	.....	16,608 09

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
—													
Clay and sand.	Cub. yds.	Cub. yds.	Cub. yds. 5,254	Cub. yds. 21,004	Cub. yds. 20,404	Cub. yds. 16,910	Cub. yds. 17,880	Cub. yds. 9,280	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds. 90,742

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

DORION.—Making two cuts for the purpose of making an approach to the basin.

BECANCOUR.—Cleaning out the cuts made along the bank in the basin the previous season. Six cuts were made, each 700 feet long and two cuts 2,000 feet long each.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE, 'LITTLE GIANT' OWNER, L. COHEN & SON.

Localities where Dredging was performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Ile au Foins, Perthier Co.	May 27.....	Sept. 25.....	11 feet	87,155	\$ cts. 21,248 60	Cts. .24½
Rigaud, Vaudreuil Co.	Sept. 25.....	Oct. 16.....	11 "	12,380	7,132 20	.24½
"	Nov. 9.....	Nov. 26.....	"	17,075	1,983 75	.48
Hudson, Vaudreuil Co.	Oct. 13.....	Nov. 5.....	10 feet	4,130		

Total expenditure, \$30,364.55. Total cubic yards removed, 120,740.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	12 00	120 00	78 00	81 00	78 00	78 00	108 00	21 00			456 00
Contingencies.....		120 00	4,257 60	4,812 00	6,219 60	6,247 40	4,153 95	4,098 00			29,908 55
Totals.....		132 00	4,335 60	4,893 00	6,297 60	6,325 40	4,261 95	4,119 00			30,364 55

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand and quick sand.....	500	17,740	20,050	25,915	25,950	13,010	17,575						120,740

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ILE AUX FOISS.—Three cuts were made, for the purpose of removing a shoal in the main channel.

RIGAUD.—Work done in front of wharf.

HUDSON.—Two cuts were made in the channel opposite the cement works.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE, 'MOHAWK,' OWNER, CANADA IMPROVEMENT COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port St. Francis, Maskinonge Co.....	July 3.....	July 30.....	14 feet	12,098	\$ 2,757 56	Cts. .223 3/4
St. Pierre les Becquets, Nicolet Co	Aug. 21.....	Nov. 10.....	8 "	39,390	8,102 91	.204 1/2

Total expenditure, \$10,860.47. Total cubic yards removed, 51,488.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	.....	.....	15 00	81 00	30 00	78 00	81 00	24 00	.....	.....	309 00
Contingencies.....	.....	.....	11 91	2,661 56	475 00	3,613 00	3,558 00	252 00	.....	.....	10,551 47
Totals.....	.....	.....	26 91	2,742 56	505 00	3,691 00	3,639 00	256 00	.....	.....	10,860 47

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand. ....	.....	.....	12,098	2,375	18,065	17,790	1,160	.....	.....	.....	.....	.....	51,488

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ST. FRANCIS.—Two cuts made for the purpose of cleaning in front of the wharf. Also three other cuts were made from wharf to the main channel.

ST. PIERRE LES BECQUETS.—A cut from main channel towards the wharf, also cleaning up a cut made the previous season.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE, 'MOHICAN' OWNER, CANADA IMPROVEMENT COMPANY.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River Jesus, Hochelaga Co.	July 1.....	Sept. 5.....	8 feet	22,838	\$ cts. 4,765 10	Cbr. 201 $\frac{1}{2}$ 20 $\frac{1}{2}$ %
Total expenditure, \$4,765.10. Total cubic yards removed, 22,838. Cost per cubic yard, 201 $\frac{1}{2}$ cts.						

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages .. .. .	.....	.....	36 00	81 00	78 00	.....	.....	.....	.....	.....	195 00
Contingencies.....	.....	.....	.....	1,074 60	3,216 60	278 90	.....	.....	.....	.....	4,570 10
Totals.....	.....	.....	36 00	1,155 60	3,294 60	278 90	.....	.....	.....	.....	4,765 10

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel and sand.....	.....	.....	.....	5,373	16,083	1,382	.....	.....	.....	.....	.....	.....	22,838

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER JESUS.—A cut was cleaned out, starting above McDonald's wharf towards Masconche river.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE NO. 2. OWNER, DOMINION DREDGING COMPANY.

Localities where Dredging was Performed.	DATE.		Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.			
Chateauguay, Chateauguay Co.	June 9, ...	November 10, ...	57,221	\$ cts. 13,006 27	Cts. 22 ¹⁸ / ₁₀

Total expenditure, \$13,006.27. Total cubic yards removed, 57,221. Cost per cubic yard, 22¹⁸/₁₀¢.

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages, ...					65 00		81 00		78 00		78 00		81 00		30 62						414 62	
Contingencies, ...					829 18		1,628 83		1,831 28		3,170 20		4,075 28		1,056 88						12,591 65	
Totals					895 18		1,709 83		1,909 28		3,248 20		4,156 28		1,087 50						13,006 27	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Gravel, ...					3,763		7,390		8,324		14,410		18,524		4,801						57,221	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

CHATEAUGUAY.—Deepening and widening the channel at the mouth of the Chateauguay River also opposite Ross' Point.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued*.
DREDGE 'NO. 3.' OWNER, DOMINION DREDGING COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
L'Assomption, L'Assomption Co., ...	July 17.	November 11.	13 ft.—14 ft.	89,994 $\frac{3}{4}$	\$ c. 15,165 65	cts. 16 $\frac{1}{2}$ $\frac{3}{4}$

Total expenditure, \$15,165.65. Total cubic yards removed, 89,994 $\frac{3}{4}$. Cost per cubic yard, 16 $\frac{1}{2}$ $\frac{3}{4}$.

DETAILS OF EXPENDITURE.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages				40 98	86 50	78 00	84 07	30 00	.....	.....	319 55
Contingencies				1,303 15	3,436 76	3,853 92	4,816 26	1,435 41	.....	.....	14,845 50
Totals				1,344 13	3,523 26	3,931 92	4,900 33	1,465 41	.....	.....	15,165 05

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand and stone				7,780	20,518	23,608 $\frac{1}{2}$	29,358 $\frac{3}{4}$	9,330	.....	.....	.....	.....	89,994 $\frac{3}{4}$

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
L'Assomption.—Deepening the channel and removing a shoal at the entrance of L'Assomption River.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 6.' OWNER, GASPARD DE SERE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Three Rivers, St. Maurice Co.	July 17	July 31	14 ft. 15 ft.	642	\$ c. 313 80	Cts. 48 $\frac{3}{4}$

Total expenditure, \$313.80. Total cubic yards removed, 642. Cost per cubic yard, 48 $\frac{3}{4}$.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages.....	.....	.....	.....	57 00	.....	.....	.....	.....	.....	.....	57 00
Contingencies .....	.....	.....	.....	256 80	.....	.....	.....	.....	.....	.....	256 80
Totals .....	.....	.....	.....	313 80	.....	.....	.....	.....	.....	.....	313 80

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay ..	.....	.....	.....	642	.....	.....	.....	.....	.....	.....	.....	.....	642

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THREE RIVERS.—A cut was made above Bureau wharf in the channel.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'No. 6.' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Maskinonge River, Maskinonge Co.....	September 7.....	November 10.....	8 ft.....	24,971	\$ c. 4,684 04	Cts. 183

Total expenditure, \$4,684.04. Total cubic yards removed, 24,971. Cost per cubic yard, 183c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
—	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages.....	.....	.....	.....	.....	13 00	75 00	78 20	12 00	.....	.....	178 20
Contingencies.....	.....	.....	.....	.....	.....	1,472 30	2,274 30	759 24	.....	.....	4,505 84
Totals.....	.....	.....	.....	.....	13 00	1,547 30	2,352 50	771 24	.....	.....	4,684 04

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
—	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand and clay.....	.....	.....	.....	.....	.....	8,118	12,635	4,218	.....	.....	.....	.....	24,971

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MASKINONGE.—Deepening and widening the channel in this river, 2½ miles below the village. One cut was made 8,700 feet long and 30 feet wide.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'No. 2,' OWNER, T. F. MOORE COMPANY.

Localities where Dredging was Performed.	DATE.		Depth of Water inside below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Blanche Shoals, Labelle Co.	August 11 . . .	November 23 . . .	12 ft.	53,010	\$ c. 11,433 60	Cts. .21½

Total expenditure, \$11,433 60. Total cubic yards removed, 53,010. Cost per cubic yard, .21½c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February and March.	Totals.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Wages					64 50	80 00	83 00	74 00			301 50
Contingencies					758 10	1,975 05	4,788 00	3,610 95			11,132 10
Totals					822 60	2,055 05	4,871 00	3,684 95			11,433 60

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand					3,610	9,405	22,800	17,195					53,010

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BLANCHE SHOALS.—Continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—*Continued.*
DREDGE 'ONEIDA,' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To.				
Isle Perrot—Vaudrenil Co.....	July 18.....	Aug. 10.....	5-9 ft.	6,045	\$ cts. 1,967 00	cts. 32½

Total expenditure, \$1,967. Total cubic yards removed, 6,045. Cost per cubic yard, 32½.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies				754 25	1,212 75						1,967 00
Totals				754 25	1,212 75						1,967 00

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, sand, stone.....				2,155	3,890								6,045

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ISLE PERROT.—Making three cuts near the Powder Factory wharf. This was the cleaning up of the channel made the previous season.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'No. 1.' OWNER, T. F. MOORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Blanche Shoals—Lafayette Co.	Aug. 25.	Nov. 23.	12 feet	27,500	\$ 6,030 50	cts. 21 $\frac{3}{4}$
Total expenditure, \$6,030.50. Total cubic yards removed, 27,500. Cost per cubic yard, 21 $\frac{3}{4}$ ¢.						

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....					18 50	80 00	83 00	74 00			255 50
					189 00	2,089 50	1,963 50	1,533 00			5,775 00
Totals.....					207 50	2,169 50	2,046 50	1,607 00			6,030 50

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Sand.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
					900	9,950	9,350	7,300					27,500

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BLANCHE SHOALS.—Continuation of the work done the previous season, being the removing of a shoal which obstructed the main channel.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1908—Continued.
DREDGE 'OTTAWA.' OWNER, W. J. POUPORE CO.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River du Loup (en haut)—Maskinonge Co	Oct. 12	Oct. 15	8 feet.	5 200	\$ cts. 1,106 00	cts. .21 ¹³ / ₃₂

Total expenditure, \$4,106. Total cubic yards removed, 5,200. Cost per cubic yard, .21¹³/₃₂.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies.....	.....	.....	.....	.....	.....	.....	14 00	.....	.....	.....	14 00
Totals .....	.....	.....	.....	.....	.....	.....	1,092 00	.....	.....	.....	1,092 00
							1,106 00	.....	.....	.....	1,106 00

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Clay.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	.....	.....	.....	.....	.....	.....	5,200	.....	.....	.....	.....	.....	5,200

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER DU LOUP (en haut)—Work consisted of cleaning and deepening in front of the Government wharf.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'ONEIDA,' OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard
	From	To				
Hudson—Vaudreuil Co.	Aug. 11	Oct. 10	10 feet	31,372½	\$ cts. 5,830 60	cts. .1877

Total expenditure, \$5,830.60. Total cubic yards removed, 31,372½. Cost per cubic yard, .1877.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages					54 00	79 55					133 55
Contingencies					1,660 05	2,913 80	1,123 20				5,697 05
Totals					1,714 05	2,993 35	1,123 20				5,830 60

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and stones					9,222½	15,910	6,240						31,372½

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

HUDSON.—Cleaning the approaches to and around wharf. Ten cuts were made 400 to 500 feet long each and 30 feet wide.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'PREMIER' OWNER, L. COHEN & SON.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Three Rivers, St. Maurice Co	Sept. 24.	Nov. 19.	27 ft. 28½ ft.	30,066	\$ cts. 12,170 40	cts. 40½ ¢
Total expenditure, \$12,170.40. Total cubic yards removed, 30,066.						

DETAILS OF EXPENDITURE.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages.....																						
Contingencies.....																						
Totals																						

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Sand																										

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

THREE RIVERS.—A cut was started at this place above the Government wharf, so as to build a coal wharf and make a place of refuge for vessels.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'PREMIER,' OWNER, CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
River Ouelle, Kamouraska Co.....	July 27	Sept. 12	15 feet	13,916 $\frac{3}{4}$	\$ 6,900 39	cts. 49 $\frac{1}{4}$

Total expenditure, \$6,900 39. Total cubic yards removed, 13,916 $\frac{3}{4}$.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....				25 00	65 00	112 50	.....	.....	.....	.....	202 50
Contingencies				840 00	4,533 89	1,324 00	.....	.....	.....	.....	6,697 89
Totals.....				865 00	4,598 89	1,436 50	.....	.....	.....	.....	6,900 39

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and stones.....		1,750	9,416 $\frac{3}{4}$	2,750	.....	.....	.....	.....	.....	.....	.....	.....	13,916 $\frac{3}{4}$

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER OUELLE.—Two cuts were made about 100 feet wide and 300 feet long.

9-10 EDWARD VII., A. 1910

ANNUAL REPORT from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'OTTAWA,' OWNER CANADA IMPROVEMENT CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Nicolet, Nicolet Co.	June 15.	Oct. 10.	10 feet.	44,395	\$ cts. 10,073 90	\$ cts. 22½

Total expenditure, \$10,073.90. Total cubic yards removed, 44,395.

DETAILS OF EXPENDITURE.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages			42 00	82 00	78 00	78 00	27 00				307 00
Contingencies			1,224 30	2,850 10	2,601 50	2,253 00	858 00				9,766 90
Totals			1,266 30	2,932 10	2,679 50	2,311 00	885 00				10,073 90

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand			5,565	12,995	11,825	10,150	3,960						44,395

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

Nicolet.—Cleaning out the channel alongside the breakwater.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE PRINCE GUY, OWNER, W. J. LOUTPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Louisville, Maskinonge Co.	May 23	July 4	6 ft. 8 ft.	23,142	\$ 5,231 93	cts. 22½
Total expenditure, \$5,231 93.	Total cubic yards removed, 23,142.					

DETAILS OF EXPENDITURE.

—	April.		May.		June.		July.		August.		September.		October.		November.		December.		January, February, and March.		Totals.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Wages		17 50		17 50		65 00		27 50													116 00	
Contingencies		1,099 40		1,099 40		3,642 00		383 53													5,124 93	
Totals		1,116 90		1,116 90		3,707 00		411 03													5,231 93	

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

—	April.		May.		June.		July.		August.		September.		October.		November.		December.		January.		February.		March.		Totals.	
	Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.		Cub. yds.	
Clay		4,780		16,594		1,768																			23,142	

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LOUISVILLE.—Two cuts were made 600 feet long by 49 feet wide in front of the wharf.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'PRINCE LOUIS,' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Yamachiche River, St. Maurice Co.	May 28	September 5	6 feet.	119,832	\$ cts. 23,883 26	cts. 198 2/3

Total expenditure, \$23,883.26. Total cubic yards removed, 119,832. Cost per cubic yard, 198 2/3 cts.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	...	10 00	97 00	75 50	65 65	...	...	...	...	...	...
Contingencies	...	355 11	7,213 60	7,713 60	7,562 80	760 00	...	...	...	...	...
Totals	...	365 11	7,340 60	7,789 10	7,628 45	760 00	...	...	...	...	...
											\$ cts. 248 15 23,635 11 23,883 26

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay	1,560	36,218	37,814	3,800	...	...	...	...	...	...	...	...	119,832

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES. —
YAMACHICHE—One cut was made to widen and deepen the channel at the entrance of this river.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'PRINCE WILLIE.' OWNER, W. J. POUPORE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
River du Loup (en haut) Maskinonge Co	July 6	Sept. 12	8 feet	55,238	18,886 42	ets.
"	Oct. 21	Nov. 13	"	47,735	12,168 42	18½
Yamachiche, St. Maurice Co.	Sept. 14	Oct. 20	6 feet, 8 feet.	84,126	533 52	14½
River St. Francis, Yamaska Co.	Nov. 20	Nov. 21	8 feet.	2,964		18

Total expenditure, \$31,588.36. Total cubic yards removed, 190,063.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$	ets.	\$	ets.	\$	ets.	\$	ets.	\$	ets.	\$
Wages				67 50	67 50	92 95	97 00	64 00			388 95
Contingencies				3,243 86	6,032 57	7,432 94	10,010 32	4,278 72			31,199 41
Totals				3,311 36	6,101 07	7,525 89	10,107 32	4,342 72			31,588 36

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand				14,392	28,642	46,742	70,788	29,499					190,063

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER DU LOUP (en haut)—Cleaning around Government wharf and Mill wharf. Work was also done at the mouth of this river.
 YAMACHICHE—Cleaning out a cut from the main channel to the entrance of the river.
 RIVER ST. FRANCIS—Cleaning a cut previously made at the entrance of this river.

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'PONTIAC,' OWNER, W. J. POUPHRE CO.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
River St. Francis, Yamaska Co.	May 11	June 11	6 feet, 7 feet.	72,384	13,205 65	18 1/2 %
River du Loup (Louiseville Mill)	Nov. 2	Nov. 21	6 feet.	20,645	4,625 46	22 1/2 %
Yamaska, Yamaska Co.	June 11	July 14	6 feet, 8 feet.	147,124	26,732 82	18 1/2 %
	July 15	Oct. 30				

Total expenditure, \$44,563.93. Total cubic yards removed, 240,153.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages		57 25	65 50	67 75	65 00	67 00	81 00	88 50	.....	.....	492 00
Contingencies		4,904 64	5,292 05	4,912 52	6,760 80	8,030 88	8,817 12	5,353 92	.....	.....	44,071 93
Totals		4,961 89	5,357 55	4,980 27	6,825 80	8,097 88	8,898 12	5,442 42	.....	.....	44,563 93

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, gravel, sand and quicksand		27,248	26,355	25,646	37,560	44,616	48,984	29,744	.....	.....	.....	.....	240,153

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER ST. FRANCIS—Two cuts were made on the west side, along the bank, to deepen for a proposed wharf. Two cuts were also made near the entrance of the river.
RIVER DU LOUP—Cleaning in front and around the wharf of the Tourville Mills.
YAMASKA—Two cuts were made in the main channel near Ile aux Girons.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.

DREDGE 'ST. PIERRE,' OWNER, ANTOINE ST. PIERRE.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From.	To.				
St. Maurice River, Champlain Co.	May 15	Aug. 31	9-12 feet.	170,800	\$ cts.	cts.
	Sept. 10	Sept. 30				
	Oct. 1	Oct. 3				
	Nov. 16	Nov. 17				
Godfroye River, Nicolet Co.	Sept. 1	Sept. 9	12 feet.	60,825	17,431 00	10½
	Oct. 5	Nov. 14				
					8,039 25	13½

Total expenditure, \$25,473.25. Total cubic yards removed, 231,625.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
Wages.....	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contingencies	45 00	1,098 00	78 00	81 00	78 00	78 00	81 00	45 00	.....	.....	486 00
	.....	.....	4,499 00	4,979 50	4,331 00	3,285 40	4,889 10	1,905 25	.....	.....	24,987 25
Totals	1,143 00	1,143 00	4,577 00	5,060 50	4,409 00	3,363 40	4,970 10	1,950 25	.....	.....	25,473 25

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
Gravel, clay, sand and boulders.....	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
	10,980	44,990	49,795	43,310	29,320	38,130	15,100	.....	.....	.....	.....	.....	231,625

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

St. MAURICE RIVER—Deepening the east channel in front of Grants Mills and the west channel near Dalton wharf. The channel was also deepened and widened near Baptist Island.

GODFROYE RIVER—Deepening in front of the Government wharf.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'CHALLENGE.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
St. Jean Des Chaillons, Lotbinière Co.	May 11	June 9	9 feet.	11,950	\$ cts.	cts.
Pointe Levis, Levis Co.	Oct. 1	Oct. 31				
Drolet Basin, Quebec, Quebec Co.	June 11	July 22				
	July 23	Sept. 30				
			12 feet.	6,750	12,058 27	41½
				8,550		

Total expenditure, \$12,058 27. Total cubic yards removed, 27,250. Cost per cubic yard, .44c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	1,397 41	1,052 89	550 00	622 00	518 55	537 50	560 40	485 00	150 82	1,884 64	7,759 21
Fuel.....		246 00	26 51	206 10		252 98	32 50	298 01		71 07	1,013 17
Provisions.....		189 74	160 95	199 02	191 60	202 34	204 53	200 17	58 68		1,410 03
Stores and equipment.....	183 39	7 70	4 00	107 08	13 26	6 86	28 23			24 20	374 72
Repairs.....	33 11	23 56	200 73	150 83	9 00	147 17	0 70	12 54	30 00	259 06	866 70
Pilotage and towage.....				4 00			25 00	315 00		179 75	523 75
Contingencies.....	28 65	11 05	2 35				10 74		27 90		80 69
Totals.....	1,642 56	1,530 91	944 54	1,289 03	735 41	1,146 85	862 10	1,220 72	267 40	2,418 72	12,058 27

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, hardpan,		2,250	4,900	5,900	4,500	2,650	7,050						27,250
boulders, clay and													
sand													

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. JEAN DES CHAILLONS.—Five cuts were made in the channel.

POINTE LEVIS. Work was done at the pier in front of the pulp wood conveyer.

QUEBEC.—Work was done at Drolet Basin and consisted in dredging at the entrance to the shipyard.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'INTERNATIONAL,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To				
Grand Trunk Basin, Levis, Levis Co.	May 18.....	June 6.....	12 feet.	9,500	{	cts.
Louise Basin, Quebec, Quebec Co.	June 8.....	June 13.....	30 feet.	1,500		
Quebec Harbour, Quebec Co.	June 15.....	Nov. 14.....	46 feet.	85,750		
Sorel, Richilieu Co.	Nov. 16.....	Nov. 21.....	.....	2,250		

Total expenditure, \$19,830.42. Total cubic yards removed, 99,000. Cost per cubic yard, .20c.

DETAILS OF EXPENDITURE.											
	April.		May.		June.		July.		August.		Totals.
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	
Wages.....	597	50	640	14	975	00	975	64	999	50	\$ cts.
Fuel.....	1,533	15	1,533	15	45	90	283	31	283	31	8,995 06
Provisions.....	196	15	221	29	343	56	337	42	349	04	1,977 44
Stores and equipment.....	810	97	569	50	38	69	2	00	42	95	3,090 81
Repairs.....	28	33	110	00	132	50	339	53	3	50	1,616 40
Contingencies.....	110	00	1,854	85	.....	.....	.....	.....	27	40	1,978 16
Totals.....	1,742	95	4,818	93	1,535	65	1,674	59	1,707	70	2,172 55
											19,830 42

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.											
	April.		May.		June.		July.		August.		Total.
	Cub. yds.	Yds.	Cub. yds.	Yds.	Cub. yds.	Yds.	Cub. yds.	Yds.	Cub. yds.	Yds.	
Clay and sand.....	5,750	.....	14,250	.....	16,000	.....	17,250	.....	17,750	.....	99,000
											Cub. yds.

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
QUEBEC.—Deepening the basin between the Grand Trunk Railway Wharf and the shore. Work done at Louise Basin consisted in deepening between the wharf and the shore. Work at Quebec harbour consisted in deepening and levelling the bottom for new crabs.
SOREL.—Work consisted in dredging the harbour opposite new wharf.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'MATTAWA,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Locality where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Lake Nipissing, Parry Sound Co.....	June 8.....	Nov. 28.....	10—15 feet.	65,950	\$ cts. 10,167 78	Cts. .15½

Total expenditure, \$10,167.78. Total cubic yards removed, 65,950. Cost per cubic yard, .15½c.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	719 00	491 34	420 00	418 54	417 10	420 00	650 35	436 47	100 32	348 87	4,421 99
Fuel.....	9 50	673 75		281 14	469 33	49 55	378 20	207 09			2,098 56
Provisions.....	32 00	123 00	123 00	219 83	76 50	153 00	183 88	148 00	23 13	36 00	1,118 34
Stores and equipment.....	34 59	59 44	101 35	18 56	25 18		169 15	86 46			562 88
Repairs.....	523 74	70 63	6 00	10 50	7 80	71 35	62 58	48 74		248 83	1,050 17
Contingencies.....	76 08	100 00	40 75		21 75	9 00	577 89	26 35	21 06	42 96	915 84
Totals.....	1,394 91	1,518 16	691 10	948 57	1,047 66	702 90	2,022 05	953 11	144 51	744 81	10,167 78

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.....			14,200	14,200	7,750	14,800	7,800	7,200					65,950

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LAKE NIPISSING.—One cut was cleaned up for a distance of 750 feet in the main channel at the mouth of the Sturgeon River. Two cuts were made in the channel at the mouth of the Little Sturgeon River. Work was also done in the channel at the mouth of the South River.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE "MISSING," OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	Date.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure, \$ cts.	Cost per Cubic Yard.
	From	To				
Gatineau River, Wright Co.	June 13.	July 25	5 7 feet.	17,630		.18
Pasquet, Labelle Co.	July 27	August 15	12 "	13,455	.....	
Ruekhand, Russell Co.	August 17	" 29	12 "	6,030	.....	
Hawkesbury, Prescott Co.	September 1	October 10	10 "	9,495	.....	
Papineauville, Labelle Co.	" 28	October 10	10 "	10,035	12,657 65	
Montebello, Labelle Co.	October 12	" 24	10 "	7,110	.....	
L'Orignal, Prescott.	" 26	November 14	.....	6,390	.....	
Green Sheat Lighthouse, Russell Co.	November 16	" 21	.....	90	.....	

Total expenditure, \$12,657.65.

Total cubic yards removed, 70,245.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	1,332 41	961 60	450 00	612 61	450 00	450 00	456 00	450 00	145 18	1,647 87	6,810 49
Fuel	.....	492 21	.....	525 99	.....	560 60	.....	.....	112 16	71 06	1,395 04
Provisions	.....	151 75	149 40	.....	181 08	184 87	162 00	178 88	53 23	.....	1,120 14
Stores and equipment	.....	3 00	.....	71 78	10 35	.....	.....	.....	14 80	1,770 48	138 36
Repairs	151 73	419 38	23 00	10 14	91 45	54 75	.....	20 00	32 14	.....	2,535 73
Pilotage and towage	.....	.....	.....	.....	.....	5 75	.....	.....	.....	.....	52 14
Contingencies	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 75
Totals	1,484 14	2,227 94	622 40	1,220 62	732 88	1,255 97	618 00	648 88	357 51	3,489 41	12,657 65

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'NIPissing'—Continued.

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April	May	June	July	August	September	October	November	December	January	February	March	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, hardpan and boulders.....			9,090	13,140	14,895	12,285	16,875	3,960					70,245

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

- GATINEAU RIVER—Removing of a sand shoal which obstructed the channel.
- FASSETT—The water was deepened.
- ROCKLAND—Deepening the channel in front of Edwards saw-mill.
- HAWKESBURY—Removing a sand shoal which had formed in the channel.
- PAPINEAUVILLE—Work was performed in the channel opposite the saw-mill as well as making a basin.
- MONTERELLO—Deepening as well as making a basin.
- L'ORIGNAL—Cleaning out and deepening to allow barges to load alongside.
- GREEN SHOALS—Removing material which had fallen in channel.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'OTTAWA' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Quebec Custom's Basin, Quebec Co.	August 10.	November 28. . .	15-23 feet.	47,345	\$ cts. 10,547 60	Cts. 22 ⁷ / ₈
" Drolet's Basin "						
" Breakwater pier "						

Total expenditure, \$10,547.60. Total cubic yards removed, 47,345.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September	October.	November	December	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages				264 38	723 53	865 36	422 91	471 81	1,285 13	853 40	4,886 52
Fuel					1,126 50	10 30			256 50	24 75	1,418 05
Provisions				176 30	273 68	262 60	157 54	167 26	233 28	297 06	1,667 72
Stores and equipment					7 54	184 05	2 00		38 66		232 25
Repairs						495 92	197 84		198 69	1,289 38	2,181 83
Pilotage and towage						50 00					50 00
Contingencies						186 13			22 10	3 00	211 23
Totals				440 68	2,131 25	2,054 36	780 29	639 07	2,034 36	2,467 59	10,547 60

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September	October.	November	December	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Sand, hardpan boulders and gravel.					4,925	7,950	16,110	18,360					47,345

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

QUEBEC—Deepening inside the Custom's Basin. Work was also performed at Drolet's Basin. Dredging done at Breakwater pier.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'ONTARIO.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Port Stanley, Essex Co.	April 20, ...	August 22, ...	16 23 feet.	40,365	\$ cts.	Cts.
Pelée Island, Essex Co.	August 24, ...	November 21, ...	8 24 "	23,980	9,460 80	14 7/10

Total expenditure, \$9,460.80. Total cubic yards removed, 64,345.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	430 92	480 88	459 49	450 00	453 77	450 00	450 00	433 95	130 00	65 00	3,864 01
Fuel.....	11 65	216 56	177 19	246 20	258 97	270 12	238 95	326 80	.....	.....	1,846 35
Provisions	122 20	124 16	271 40	153 00	153 00	153 50	217 88	153 00	.....	.....	1,318 14
Stores and equipment	19 15	3 91	23 20	74 90	19 55	219 94	59 65	8 00	.....	.....	428 33
Repairs.....	40 31	181 35	8 96	1,167 99	79 00	74 71	9 51	25 35	.....	.....	1,586 32
Pilotage and towage .....	.....	.....	.....	.....	100 00	.....	85 00	.....	.....	.....	185 00
Contingencies.	28 74	23 30	6 65	16 51	11 31	25 53	.....	91 21	.....	.....	202 85
Totals	752 97	1,030 19	945 31	2,108 60	1,975 60	1,193 83	1,060 99	1,005 31	130 00	65 00	9,460 80

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Gravel, clay and sand	1,035	9,900	11,295	9,855	9,150	2,850	14,610	5,650	.....	.....	.....	.....	64,345

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT STANLEY.—Work at this place was started dredging crib seats for new breakwater. Three cuts were also made at north-west end of breakwater. On each side of entrance to harbour four cuts were made. Inside of harbour on each side of west pier two cuts were made through shoal spot. On each side of harbour to entrance of turning basin five cuts were made. A shoal was removed on same side further north.

PELÉE ISLAND.—Work done consisted in making one cut on south side of McCormick's stone quarry dock. Also dredging at the lighthouse marsh.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'PROGRESS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From	To				
Quebec, Quebec Co.	May 5	June 20	12 15 feet.	11,265	\$ cts. 20,934 28	Cts. 27 ½
Rimouski, Rimouski Co.	June 22	September 26	15 "	65,800		

Total expenditure, \$20,934.28. Total cubic yards removed, 77,065.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	906 00	1,030 52	1,012 50	1,035 00	1,112 94	1,130 05	1,139 00	588 00	294 92	860 53	9,139 46
Fuel.....	83 96	213 05		435 90	435 90	1,244 78	215 45	381 72			2,475 86
Provisions.....	343 98	331 72	392 50	526 99	428 86	421 48	439 87	239 50	68 50	207 28	3,420 68
Stores and equipment.....	810 97		258 49	261 09	838 51		141 80		48 06		2,361 92
Repairs.....	110 81	163 57	4 68	240 51	452 95		263 15		25 00	22 56	1,283 23
Pilotage and towage.....			3 00	13 50	14 42				150 00	85 00	235 00
Contingencies.....								14 60	872 21	1,019 60	2,018 13
Totals.....	2,255 72	1,758 86	1,671 17	2,077 09	3,314 58	2,796 31	2,283 07	1,123 82	1,158 69	2,194 97	20,934 28

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand.....		5,565	10,300	23,360	20,400	16,300							77,065

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

QUEBEC—Operations consisted in deepening the entrance to Drolets ship-yard.

RIMOUSKI—Work consisted in deepening and widening the channel from the wharf to deep water.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'QUEEN.' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
New Liskeard, Nipissing Co.....	June 19.....	Oct. 31.....	9-12 feet.	29,682	\$ cts. 10,388 33	Cts. 32½
Ville Marie, Pontiac Co.	Nov. 1.....	Nov. 14.....	12 feet.	2,520		
Total expenditure, \$10,388.33. Total cubic yards removed, 32,202. Cost per cubic yard, .32½.						
DETAILS OF EXPENDITURE.						

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	375 83	548 13	477 66	466 94	478 05	465 00	475 00	575 40	109 43	362 50	4,333 94
Fuel.....	449 20	888 13	860 00	39 00	168 00	168 00	198 35	178 82	52 02	24 00	2,236 33
Provisions ..	123 65	248 46	89 45	237 78	108 00	237 54	66 53	50 78	50 78	40 32	1,488 53
Stores and equipment.....	43 90	375 51	8 00	108 80	237 54	103 30	128 55	84 22	84 22	158 95	931 38
Repairs.....	158 08	.....	97 61	41 35	170 52	119 00	.....	81 00	.....	.....	942 58
Pilotage and towage.....	.....	50 36	11 15	.....	.....	34 00	83 17	8 25	15 44	23 20	290 00
Contingencies.....	30 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	255 57
Totals.....	1,180 66	2,110 59	1,543 87	893 87	1,054 11	889 30	951 60	843 47	311 89	608 97	10,388 33

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay.....	1,704	7,088	7,180	8,058	5,652	2,520	.....	.....	.....	.....	.....	.....	32,202

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NEW LISKEARD.—Dredging of a basin in front of wharf.
VILLE MARIE.—Two cuts were made. This work was done to remove material that had fallen in during the spring freshet.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'RICHELIEU,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was performed.	DATE.		Depth of Water made below Zero.	Cubic Yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
St. Johns Yacht Club, Iberville Co.	May 21.....	June 6.....	6-10 feet.	2,900	} 6,008 52	Cts. .19%
Isle aux Noix, St. Johns Co.	June 9.....	Sept. 25.....	8-10 feet.	27,750		
St. Johns.....	Sept. 28.....	Dec. 4.....	8-9 feet.	7,062		
Total expenditure, \$6,008.52.			Total cubic yards removed, 37,712.		Cost per cubic yard, .19 $\frac{1}{2}$.	

DETAILS OF EXPENDITURE.

Work done in Oct., Nov. and Dec. for Richelieu Improvements.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January February, and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	369 87	333 84	415 00	415 00	415 00	415 00	415 00	.....	.....	.....	2,423 71
Fuel.....	.....	291 56	204 00	204 00	4 40	234 87	.....	.....	.....	.....	734 83
Provisions.....	.....	181 09	123 00	153 00	198 00	156 15	.....	.....	.....	.....	811 24
Stores and equipment.....	35 02	204 49	.....	7 55	.....	6 09	.....	.....	.....	.....	253 15
Repairs.....	22 70	846 10	5 76	544 18	50 45	13 39	.....	.....	.....	.....	1,483 18
Pilotage and towage.....	.....	10 00	.....	.....	.....	.....	.....	.....	.....	.....	10 00
Contingencies.....	3 25	24 38	.....	4 78	.....	3 15	.....	.....	256 85	.....	292 41
Totals.....	430 84	1,951 46	543 76	1,328 51	667 85	829 25	.....	.....	256 85	.....	6,008 52

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay, hardpan, boulders and sand.....	1,600	7,050	8,050	8,600	5,500	3,645	400	2,807	.....	.....	.....	.....	37,712

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. JOHNS.—Five cuts were made in the main channel, near Iberville wharf. One cut was also made in channel alongside canal bank.
 ILE AUX NOIX.—Deepening and cleaning out alongside the wharf, and deepening the channel at the mouth of the Johnston River.

9-10 EDWARD VII., A. 1910

ANNUAL Report from April 1, 1908, to March 31, 1909 —Continued.
DREDGE 'SIE RICHARD,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water made below Zero.	Cubic yards Removed.	Expenditure.	Cost per Cubic Yard.
	From.	To.				
Kingston, Frontenac Co.	June 4.....	Aug. 8.....	14 feet.	36,700		
Wolf Island Channel, Frontenac Co.	Oct. 10.....	Nov. 7.....	18 feet.	27,200	9,610 33	.13½
Garden Island	Aug. 10.....	Oct. 17.....	12 feet.	7,800		
	Nov. 9.....	Nov. 28.....				

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	% cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	338 00	405 16	430 00	445 00	520 00	430 00	430 00	490 30	109 37	789 87	4,387 70
Fuel.....	163 75		166 00	270 75	306 25	268 25	232 75	182 85		160 60	1,751 20
Provisions.....	70 20	117 06	123 00	158 81	159 50	153 00	153 00	187 87			1,122 44
Stores and equipment.....	18 00	6 00	232 57	22 59		173 52	129 60	4 75	24 95	87 59	699 57
Repairs.....	48 66	59 06	39 51	39 27	42 90	3 80	27 08	27 45		354 68	642 41
Pilotage and towage.....						66 00			12 55	25 00	91 00
Contingencies.....	23 35	15 55	3 85	18 43	6 53			4 45		831 30	916 01
Totals.....	661 96	602 83	994 93	954 85	1,035 18	1,094 57	972 43	897 67	146 87	2,249 04	9,619 33

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and mud.....	11,900	14,700	8,500	13,800	11,400	11,400							71,700

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

KINGSTON. — Work done alongside Richardson's coal dock in the harbour of refuge and in the new channel leading to the smelter.
WOLF ISLAND CHANNEL. — In the main channel between the lighthouse and the gas buoy.
GARDEN ISLAND. — Alongside and in front of the pier.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1908, to March 31, 1909—Continued.
DREDGE 'ST. LOUIS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.	DATE.		Depth of Water in fathoms below Zero.	Cubic yards Removal.	Expenditure. \$ cts.	Cost per Cubic Yard. cts.
	From.	To.				
Vermont, Jacques Cartier Co.	June 4	Aug. 1	9-11 feet.	3,712		
Yamaska, Yamaska Co.	Aug. 3	Oct. 3	7-9 feet.	11,907		
River Chicout (Berthier).	Oct. 5	Nov. 9	8-10 feet.	7,410	6,349 29	.27½

Total expenditure, \$6,349.29. Total cubic yards removed, 23,019. Cost per cubic yard, .27½.

DETAILS OF EXPENDITURE.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January, February and March.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages	159 00	405 00	428 40	395 00	375 00	416 00	411 50	283 50	16 81	198 89	3,089 13
Fuel	22 95	13 67	171 58	133 22	190 96		220 00	184 16	7 25	7 25	353 98
Provisions		121 35	148 30	183 15	183 00	150 03	151 05	109 53		27 55	1,079 96
Stores	113 59	25 45	10 25	40 05			5 02	7 15		21 48	223 00
Repairs			201 28	54 01	362 24			59 11	25 47		704 79
Lightage and towage	9 88	12 64	3 45			216 00		20 00			236 00
Contingencies					4 56			17 75	11 51	2 35	62 31
Totals	305 42	581 11	966 46	805 47	1,115 76	782 03	793 22	681 14	61 07	257 52	6,349 29

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	March.	Totals.
	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.	Cub. yds.
Clay and sand	2,012	1,450	7,473	3,744	6,990	1,380						23,019

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VERMONT. Work was done in front of the Government Wharf, and in the main channel below the wharf. Two cuts were made at the foot of the aux Heron.

YAMASKA. Cleaning a cut in Bay La Valliere opposite the St. Jean. Two cuts were made, in the main channel at the foot of the 1st, St. Jean.

9-10 EDWARD VII., A. 1910

PROVINCE OF MANITOBA.

ICELANDIC RIVER.

The object of this work is the dredging of a channel from the mouth of the Icelandic river, through the shallow portion of Icelandic bay, to deep water in Lake Winnipeg.

The intention is to afford shallow draft navigation to enable boats to go up the river $3\frac{1}{2}$ miles to Riverton, commonly known as Icelandic river.

Riverton and the adjacent district has a population of some 350 inhabitants. The principal industries are lumber cordwood and fishing.

The importance of the project would not appear to warrant an undertaking of this magnitude and the present intention is to put a channel through, giving a navigable depth of about seven feet of water at the ordinary stage of water. In periods of low water, which seldom occur, this navigable depth would be reduced to $4\frac{1}{2}$ feet.

With the intention of making this channel as permanent as possible, it was decided to establish it south of the present one, the idea being, that the material, a stiff clay, would not be so apt to fill in from storms.

During the period from September 14 to October 24, dredge *Assiniboine* was engaged in the dredging required at this place. On the latter date, a channel averaging 45 feet in width, and 2,140 feet in length was dredged, giving a depth at low water of five feet.

On July 27, dredge *Crane* was sent to Icelandic river, in connection with the opening up of the new channel leading from the mouth of the Icelandic river to deep water in Lake Winnipeg.

The channel was located and dredge commenced operations on August 1. During the period from August 1 to October 24, on which date work was abandoned for the season, dredge *Crane* excavated 5,676 cubic yards of stiff clay in making a channel, 2,100 feet in length, 40 feet in width, giving an average depth of $2\frac{1}{2}$ feet. This will give a navigable depth of 6 feet at the ordinary stage of water on the lake.

The expenditure of dredge *Crane* on this work was \$2,400.74, making a cost of 42.3 cents per cubic yard.

The dredging done by dredges *Assiniboine* and *Crane* was measured in place and not in scows as is the case with dredges *Winnipeg* and *Manitoba*.

LAKE FRANCES.

Dredge *Manitoba* and equipment were put into commission on May 7, at the landing, and after the usual spring outfitting and repairs, was sent to Lake Frances outlet.

Considerable filling in had taken place between the entrance piers, and it was also thought advisable to make repairs to the north entrance pier.

Between May 13 and 24, some 1,200 cubic yards of earth and stone were removed from the entrance and used for filling in back of the north pier.

The back portion of the outer end of this pier was also damaged by an ice shove, in the early part of the season, and repairs were effected by the dredge crew while at this place. The repairs consisted in the putting in of piles, brush and ten cubic yards of stone.

The expenditure incurred on the above work of dredging and repairs to pier was \$300.

SESSIONAL PAPER No. 19

RED RIVER.

After outfitting, dredge *Winnipeg* was towed to the mouth of the Red river on May 12, preparatory to doing the necessary dredging in the old channel leading from the mouth of the river to deep water in the lake.

From May 13 to 26, was occupied in marking out the channel by means of buoys and guide piles driven with the pile driver scow.

It was thought to put the dredge at work through the shallowest portion of the channel, and between May 26 and July 9, some 11,200 cubic yards of sand and clay were removed in forming a channel, 80 feet wide, with a depth of 12 feet of water at the existing level of the lake. The distance covered represented the outer 1,700 lineal feet of the channel extending to deep water in the lake.

On the completion of the dredging in the old channel, dredge *Winnipeg* was placed at work on the new channel and between July 9 and September 1, excavated 19,500 cubic yards of sand and clay on the outer bar and 1,120 cubic yards in straightening out portions of the river channel.

On September 1, dredge *Winnipeg* towed up to Selkirk and repairs and alterations in steering gear of tug *Sir Hector* were effected.

The installation of machinery, converting the snag boat into a hydraulic dredge, was completed on June 8, and the dredge *Assiniboine* and equipment proceeded to the mouth of the Red river, in connection with the dredging required in the new channel.

During the period extending from June 8 to September 11, some 28,000 cubic yards of sand and clay were removed in making a channel through the bar formed at the mouth of the new channel.

The actual working period was 345 hours.

Taking into consideration the fact that this was new machinery and operated by a crew without any experience in this class of machinery, the results obtained have been satisfactory.

ST. ANDREWS LOCK.

The dredging of the lower entrance into the St. Andrews lock was undertaken by dredge *Winnipeg* on September 7, and was continued up to the end of the season, with the exception of some dredging done on account of Messrs. Quinlan & Robertson contract for the construction of the lock and dam.

Between September 7 and November 2, some 12,200 cubic yards of earth, boulders and gravel were removed in the lower entrance, in dredging a channel, 700 feet in length, and 50 feet in width. The material was removed to rock surface at approximately elevation of 673.0.

The material was deposited in the river below the first bend, in deep water.

Between September 14 and October 10, dredge *Winnipeg*, 60½ hours filling in cofferdam for Messrs. Quinlan & Robertson. The charge for dredge *Winnipeg* and equipment was \$6.50 per hour.

On November 3, dredge *Winnipeg* went into winter quarters at the Selkirk slough.

SWAN LAKE.

On the completion of the dredging at Lake Frances outlet, dredge *Manitoba* and equipment towed up to Swan creek, on the east side of Lake Manitoba, about 16 miles above Oak Point.

The object of this work is the dredging of a channel or waterway to the colonization road.

From Lake Manitoba up Swan creek, a distance of some 2½ miles, there is a navigable channel with a minimum depth of six feet. The remainder of the distance, 9,900 lineal feet, it was found necessary to dredge.

9-10 EDWARD VII., A. 1910

The channel, when completed, will afford access to the colonization road and will also drain a large area of drowned lands.

The surrounding country is fairly well settled, and is particularly well adapted for a grazing district.

During the period from May 25, to the completion of the season's work, on November 12, dredge *Manitoba* covered a distance of 9,410 lineal feet, making an average width of 34 feet, and a navigable depth of six feet at low water. The amount of material removed amounted to 78,066 cubic yards. The material in the early part of the season consisted mostly of muskeg and earth overlaying a hard bottom of clay, gravel and boulders.

There still remains 490 lineal feet of dredging to complete the work.

The material excavated has been cast over to both sides of the channel formed. The work being sheltered from storms, no delays have occurred from this cause.

On November 16, dredge *Manitoba* and equipment went into winter quarters at Swan Creek, to be in readiness to complete the work there on the opening of navigation.

WINNIPEGOSIS LAKE.

During the past year, the channel at the mouth of the Mossy river has been maintained.

Dredge *Priestman* was put to work at this locality on June 1, and was laid up for the season on October 13.

The level of Lake Winnipegosis has been considerably higher this season than for some years back, and no difficulty has been experienced in crossing the bar usually formed at the mouth of the river.

It is considered that a channel of sufficient width and depth has now been made, that will maintain itself for some years, and it is not the intention of carrying on this dredging during the coming season.

Dredge *Priestman* has been laid up at Winnipegosis and most of the tools and outfit have been sent to equip the dredge at the foot of Lake Dauphin.

The small tug has been shipped to Selkirk to be used in connection with the dredging to be done at the St. Andrews lock.

During the working season, from June 1 to October 13, a total of 25,100 cubic yards of sand and clay has been removed by dredge *Priestman*.

Amount expended, \$3,109.20.

DREDGE VESSEL REPAIRS.

During the early part of the season the customary repairs and outfitting to dredging plant at Selkirk and Lake Manitoba were effected.

New sides and ends to the pockets of the two dump scows at Selkirk were built.

The crane of dredge *Winnipeg* was repaired and strengthened and tie rods and braces inserted in forward end of dredge.

NEW DREDGING PLANT.

During the months of April and May, the alterations to dredge *Assiniboine* were completed.

The dredge was then thoroughly equipped as a hydraulic dredge with 10-inch suction and 12-inch discharge.

SESSIONAL PAPER No. 19

Seven pontoons 40 feet by 12 feet by 18 inches deep, for carrying the discharge pipes, was completed in May.

A steam pile driver scow was also constructed for the purpose of driving piles for the proposed construction work at the mouth of the Red river, also for driving mooring piles for operating dredge *Assiniboine*.

This scow is equipped with a 2,000 pound hammer working in leads, 35 feet long. The hammer is operated by a 20 h.p. hoisting engine.

During the month of March, construction was started on two new 60-yard bottom dump scows to be used in connection with dredge *Winnipeg*.

The construction of a new dredge to replace dredge *Winnipeg* was started in March.

This will be a dipper dredge of the boom type with 10-inch by 14-inch double cylinder, friction hoisting and backing machinery, operating a three-yard dipper.

The general dimensions of the hull are 80 by 33 by 8 feet deep.

SESSIONAL PAPER No. 19

Working Expenses.....	62 81	713 31	825 33	594 67	135 95	.....	.....	.....	.....	2,332 10
Repairs, ordinary.....	.....	3 25	.....	65 39	.....	.....	.....	.....	.....	68 61
Totals.....	62 81	716 56	825 33	660 06	135 95	.....	.....	.....	.....	2,400 74

DREDGE 'MANITOBA.'

Wages.....	605 60	528 70	445 00	442 18	221 05	.....	.....	.....	.....	3,211 70
Wood.....	90 00	.....	21 00	82 00	97 25	.....	.....	.....	.....	822 25
Provisions.....	267 50	81 41	198 25	130 26	13 20	.....	.....	.....	.....	1,024 16
Stores.....	16 85	20 91	3 50	11 14	3 29	.....	.....	.....	.....	146 67
Equipment.....	63 85	17 35	6 35	0 85	.....	.....	.....	.....	.....	89 30
Repairs.....	177 38	141 37	210 10	208 26	90 87	.....	.....	.....	.....	898 86
Contingencies.....	7 00	8 00	8 20	14 40	11 35	.....	.....	.....	.....	110 95
Totals.....	1,228 18	797 77	805 40	889 09	439 52	.....	.....	.....	.....	6,304 49
Working expenses.....	1,050 80	656 40	685 30	680 83	348 65	.....	.....	.....	.....	5,405 63
Repairs, ordinary.....	177 38	141 37	210 10	208 26	90 87	.....	.....	.....	.....	898 86
Totals.....	1,228 18	797 77	805 40	889 09	439 52	.....	.....	.....	.....	6,304 49

DREDGE 'PRIESTMAN.'

Wages.....	456 45	450 00	454 00	308 69	40 00	.....	.....	.....	.....	2,402 93
Coal.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49 50
Wood.....	4 90	3 50	75 97	49 52	.....	.....	.....	.....	.....	91 95
Provisions.....	79 76	72 63	23 54	8 62	.....	.....	.....	.....	.....	100 35
Stores.....	8 32	5 95	5 50	2 93	.....	.....	.....	.....	.....	378 46
Equipment.....	2 25	2 89	1 30	.....	.....	.....	.....	.....	.....	25 31
Repairs.....	2 50	.....	10 50	2 50	8 82	.....	.....	.....	.....	14 60
Contingencies.....	2 75	2 25	.....	.....	.....	.....	.....	.....	.....	28 17
Totals.....	556 93	537 22	570 81	372 26	48 82	.....	.....	.....	.....	40 05
Working expenses.....	556 93	537 22	569 51	372 26	40 00	.....	.....	.....	.....	19 09
Repairs, ordinary.....	.....	.....	1 30	.....	8 82	.....	.....	.....	.....	37 55
Totals.....	556 93	537 22	570 81	372 26	48 82	.....	.....	.....	.....	3,109 50

9-10 EDWARD VII., A. 1910

CLASSIFICATION OF DISBURSEMENTS OF the Dredges during the Year ended March 31, 1909—Continued.
DREDGE 'ASSINIBOINE.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	708 62	686 13	549 17	723 18	330 47	.....	.....	.....	.....	.....	.....	692 70	3,690 27
Coal.....	738 03	789 93	.....	192 42	.....	.....	.....	.....	.....	.....	.....	616 90	2,337 28
Wood.....	2 00	.....	1 25	.....	6 38	.....	.....	.....	.....	.....	.....	.....	9 63
Provisions.....	110 59	166 73	29 98	191 00	116 32	.....	.....	.....	.....	.....	.....	357 17	971 79
Stores.....	74 44	23 55	3 55	33 61	12 40	.....	.....	.....	.....	.....	.....	151 44	300 29
Equipment.....	100 00	71 15	18 28	.....	.....	.....	.....	.....	.....	.....	.....	232 03	421 46
Repairs.....	4 43	.....	8 69	38 98	40 16	.....	.....	.....	.....	.....	.....	.....	92 26
Contingencies.....	207 80	25 00	22 01	205 44	111 91	.....	.....	.....	.....	.....	.....	5 28	577 44
Totals.....	1,945 91	1,763 79	632 93	1,384 63	617 64	.....	.....	.....	.....	.....	.....	2,055 52	8,400 42
Working expenses.....	1,941 48	1,763 79	624 24	1,345 65	577 48	.....	.....	.....	.....	.....	.....	2,055 52	8,308 16
Repairs, ordinary.....	4 43	.....	8 69	38 98	40 16	.....	.....	.....	.....	.....	.....	.....	92 26
Totals.....	1,945 91	1,763 79	632 93	1,384 63	617 64	.....	.....	.....	.....	.....	.....	2,055 52	8,400 42

SESSIONAL PAPER No. 19

PROVINCE OF BRITISH COLUMBIA.

DREDGING—BRITISH COLUMBIA.

Under this head are included the maintenance and operating expenses of the hydraulic dredge *King Edward*, the snag boat *Samson*, the snag scow on the Naas river and the new *Fruhling* dredge, as well as the expenses of the dredge *Mud Lark*, while engaged at Union Bay.

Dredge 'King Edward.'

From April 1 to May 16, 1908, the *King Edward* was engaged at Matsqui, Fraser river, in filling around groynes built for the protection of the bank and dykes in conjunction with the provincial government. From May 20 to June 30, she was engaged at Harrison river and the Fraser river saw mills. She moved to English bay, Vancouver, on July 27. On the completion of this work, on August 18, she was hauled out on the marine railway for repairs to hull, repainting, &c. These repairs were completed on September 2, when she returned to New Westminster, and, on the 5th, resumed work on Annieville bar, where she is still at work.

Expenditure, \$40,867.63.

Snag Boat 'Samson.'

The operations of this boat, chargeable to the service of 'Dredging, B.C.' represent the usual work of snagging or removing snags from the channel of the Fraser river and at other points, where they interfere with the fishermen or their nets; making surveys, and attending to the buoys marking the channel at the mouth of the Fraser river. This latter service is performed for the Department of Marine and Fisheries and is becoming somewhat exacting owing to the carelessness of the captains of the different tugs towing logs up the river. They allow their tow to swing over the buoy, which is either lifted up bodily or carried off or dragged a long distance out of position. Taking soundings and replacing these buoys takes time and unfavourable weather conditions entail considerable delay. The Department of Marine and Fisheries, however, makes no demur to paying for the services of the *Samson* at the rate of \$50 per day while engaged on this work. The amount received from this source is placed to the credit of the appropriation for 'Dredging, B.C.'

Expenditure, \$15,289.55.

New 'Fruhling' Suction Dredge.

The above dredge was purchased in Germany for the sum of \$250,000, delivered in good order in Victoria or other seaport in British Columbia. The *Fruhling* arrived at Victoria on March 2, 127 days out, and moored at the Hudson's Bay wharf. On March 14, arrangements were made for docking the *Fruhling* in the government graving dock at Esquimalt. She was docked and the dock emptied by 2 p.m., on March 15, when a careful examination was made and an inspection of her hull was pronounced satisfactory. After her bottom had been cleaned and scraped, she received two coats of paint, one each of anti-corrosive and anti-fouling. On March 17 a trial was made of her pumps and machinery at the mouth of Victoria harbour, but the material was too hard to give any fair test of her capacity. She was ordered to New Westminster under our own officers. On March 18, on her way to New West-

9-10 EDWARD VII., A. 1910

minster, she made a trial of her capacity on the sand heads at the mouth of the Fraser river, her future field of work, which lasted some hours and gave very satisfactory results. On March 18, the dredge was accepted.

The *Fruhling* continued on the sand heads, doing her work up to specifications and filling her 800 yard hoppers in from 30 to 35 minutes. The long run out to beyond the lightship to dump, some three miles and return, was against a large daily output, limiting her to five loads per day, but she has proved that she can lift her 1,500 cubic yards of sand per hour. The amount moved, however, will be regulated, as in every case of excavation, by her length of haul.

The *Fruhling* continued steadily at work until April 10, when, owing to some small informality in the papers of transfer or purchase, requiring a reference to Germany, her captain received orders from the owners to lay the dredge up pending a settlement. She came to Westminster and tied up at our wharf, where she remained until matters were adjusted, on April 29. She resumed work on May 3, operating for some three days on Annieville bar on her way down to the mouth of the river, to save moving the dredge *King Edward* from the upper groyne.

The following are the principal particulars of the *Fruhling*, a full description of which is given in the specification accompanying the contract:—

Length between perpendiculars, 187.0 feet.

Breadth, extreme, 34.6 feet.

Moulded depth, 14.9 feet.

Dredging depth, 45 feet.

Load capacity, 1,000 tons.

Speed, loaded, 9 knots.

Speed, light, 12 knots.

Indicated horse power, 1,100 tons.

She is a flush-decked, steel, twin screw steamer, with hoppers forward which can be emptied either through bottom doors controlled by hydraulic engines or by pump suction discharging contents through deck pipe into shore connection for reclamation work. There are two boilers of the usual marine return tube type providing steam for the four sets of main engines, each of 250 I.H.P.

There is no better testimonial as to the sea-going properties of the dredge *Fruhling* and the class of her machinery than the fact that, after an unusually rough trip, both in the Indian ocean and the Pacific, she arrived here after a 17,000 mile voyage a little weather-beaten but apparently in all essentials fit to make the return trip after cleaning and repairing her hull.

The machinery is a marvel of convenience and strength and controls the movements of all the workable portions of the dredge. She works on the sand heads in weather such as none of our other dredges could face, which has always proved such a serious draw-back to all attempts to get satisfactory work in that exposed locality.

Expenditure, \$1,939.68.

UNION BAY.

The dredge *Mud Lark* was detailed for work in the interests of the coal industry. She operated there from the 20th to the end of June in clearing away the refuse that unavoidably accumulates in front of the wharfs, her expenses, while working at this point, being charged to 'Dredging, B.C.'

Expenditure, \$1,442.95.

DREDGE REPAIRS, B.C.

This service covers the expenditure in repairs to the different dredges and boats in the government service in British Columbia, that is, such repairs as cannot be done by our own crews and machinists. As will be seen, in the case of the dredges *Mud*

SESSIONAL PAPER No. 19

Lark and *King Edward*, but in the case of the *Mud Lark*, a considerable portion of the expense is represented by repairs to hopper and coal scows from time to time, as occasion required.

Mud Lark.

General repairs were made from time to time to this dredge. Two coal scows were hauled out and new bottom, deck planking and stanchions put in. One of these scows has since been handed over to the dredge *Ajax*. The tender *Princess* and two hopper scows also underwent repairs as occasion required.

Expenditure, \$13,081.66.

King Edward.

General repairs, incidental to ordinary wear and tear, were made to machinery, pipes and pontoons. The dredge itself was hauled out on the marine railway at Vancouver. The planking of her hull was far gone in decay and had to be replaced; new spud boxes were built, as the old ones were leaking badly and beyond repair; a complete new set of rubber couplings, for discharge pipes, some fifty in number, and a length of suction pipe, as well as about 1,000 feet of discharge pipe, were purchased.

Expenditure, \$13,559.54.

Snag Boat 'Samson.'

Only a few minor repairs were required.

Expenditure, \$280.63.

Tug 'Petrel.'

This boat was hauled out on the ways and received her usual annual over-hauling, painting, &c.

Expenditure, \$710.95.

'Ajax.'

Considerable expense was incurred with the new hopper scows attached to this dredge in getting the doors to work properly. They had to be remodelled and re-fitted and are now working all right. We also have had trouble in the matter of the 2½-inch hoisting cable. The life of those cables is surprisingly short, varying from six weeks to two months, ordinary wear. They are the best obtainable, 230 feet long, 2½ inches diameter, 6 strands of 37 wires plough steel, at \$1.62, delivered in Victoria, or \$372.60 for each renewal. I find on inquiry that our experience is no exception and that the dredges in Montreal harbour have the same experience. It obliges us, however, to keep a standing order in force to avoid being laid up.

Expenditure, \$3,235.11.

NEW DREDGING PLANT.

The expenditure under this head has been entirely in connection with the dredge *Ajax* in equipment, repairs and alterations to some parts of the machinery. The crane, although according to drawing, developed weakness at all the plate joints and butt plates had to be rivetted on. The stern spud was very dangerous and had to be railed around and part of the opening covered to avoid accidents. A new arrangement was also necessary to prevent the cable operating this spud from jumping the sheave. The dredge is now in good working order and apart from the renewal of the cable, mentioned under the head of 'Dredge Repairs,' should not be heavy on dredge repairs.

Expenditure, \$9,493.70.

9-10 EDWARD VII., A. 1910

DREDGING PLANT UNDER THE CONTROL OF THE DEPARTMENT OF PUBLIC WORKS, 1908.

MARITIME PROVINCES.

'St. Lawrence' self-propelling elevator dredge.

Length over all, 170.0 feet; beam, 30.0 feet; least working depth, 8.5 feet; greatest working depth, 28.0 feet.

Capacity of hopper, 350 cubic yards.

Daily dredging in hard material, 350 to 700 cubic yards.

" " ordinary earth, 750 to 1,000 cubic yards.

" " soft earth, 1,050 to 1,400 cubic yards.

'Canada' self-propelling elevator dredge.

Length over all, 130.0 feet; beam, 20.0 feet; least working depth, 7.0 feet; greatest working depth, 16.0 feet.

Capacity of hopper, 90 cubic yards.

Daily dredging in hard bottom, 180 to 270 cubic yards.

" " ordinary material, 180 to 360 cubic yards.

" " soft material, 360 to 450 cubic yards.

'Prince Edward' spoon dredge.

Length, 80 feet; width, 28 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 700 cubic yards.

Number of accompanying dump scows or barges, 3.

Capacity of bucket or spoon, $1\frac{1}{2}$ cubic yards.

'Geo. McKenzie' spoon or dipper dredge (wooden hull).

Length, 90 feet; width, 28 feet; greatest working depth, 22 feet.

Daily rate of dredging in hard material, 350 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 600 cubic yards.

Number of dump scows or barges used, 3.

'Cape Breton' boom and dipper dredge (steel hull).

Length, 91 feet; beam, 36 feet; greatest depth, 34 feet.

Daily rate of dredging in hard material, 1,000 cubic yards.

" " ordinary bottom, 1,500 cubic yards.

" " soft bottom, 2,000 cubic yards.

The spoon 'New Dominion' (wooden hull).

Length over all, 90 feet; width, 28 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 450 cubic yards.

" " soft material, 600 to 700 cubic yards.

SESSIONAL PAPER No. 19

The clam shell dredge 'New Brunswick' (wooden hull).

Length over all, 90 feet; width, 25 feet; greatest working depth, 17 feet.

Daily rate of dredging in hard material, 180 cubic yards.

" " ordinary material, 300 cubic yards.

" " soft material, 650 cubic yards.

The 'W. S. Fielding' combined elevator and hydraulic hopper dredge.

Length, 250 feet; beam, 42 feet; depth, 18 feet; working depth, 60 feet.

Capacity of hoppers, 1,000 cubic yards.

Daily output of buckets, 2,600 yards.

The spoon dredge 'Montague' (steel hull).

Length over all, 90 feet; width, 37 feet 8 inches; draught, 5 feet 6 inches; greatest working depth, 28 feet.

Daily rate of dredging, 10 hours, 1,000 cubic yards.

Number of barges used (each 72 feet long 19 feet 8 inches wide, depth 7 feet), 2.

The sand pump dredge 'Northumberland' (steel hull).

Length, 130 feet; agitator, 65 feet; width, 52 feet; draught, 7 feet; working depth, 40 feet.

Daily working capacity, 4,000 cubic yards in ten hours.

Tug 'Helena.'

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 25.

Tug 'Cricket.'

Length, 36.5 feet; beam, 7.3 feet; draught, 3.10 feet; horse-power, 4.

Tug 'Rona.'

Length, 85.0 feet; beam, 19.3 feet; draught, 8.0 feet; horse-power, 25.

One pile driver, with boiler and engine mounted on scow.

One stone lifter with large grips (no boiler).

There are two (2) steel hopper barges of 200 cubic yards capacity under contract for the dredges in the maritime provinces.

QUEBEC AND ONTARIO.

'Queen' dipper dredge.

Length, 65.3 feet; beam, 25 feet.

Greatest working depth, 17.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 400 cubic yards.

" " soft material, 600 cubic yards.

(Dredge attended by tug *Sensation* and two dump scows of 30 cubic yards capacity.)

'Nipissing' dipper dredge.

Length, 70.7 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " soft material, 800 cubic yards.

" " ordinary material, 500 cubic yards.

Capacity of bucket, 3 cubic yards.

(Attended by tug *Delisle*, 2 dump scows and 1 coal tender.)

9-10 EDWARD VII., A. 1910

'Ontario' dipper dredge.

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Sir John* and 2 dump scows.)

'Challenge' dipper dredge.

Length, 70.5 feet; beam, 25.0 feet; greatest working depth, 21.10 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Trudeau* and 2 dump scows.)

'St. Louis' spoon dredge.

Length, 50.0 feet; beam, 14.0 feet; greatest working depth, 12.0 feet.

Daily rate of dredging in hard material, 50 cubic yards.

" " soft material, 300 cubic yards.

(Attended by tug *Daisy* and 2 dump scows.) Used only in light work.

Twin stone lifter (cutamaran.)

Length of each wooden hull, 42.0 feet; beam of each wooden hull, 8.5 feet; distance between hulls, 7.0 feet.

'Reserve' wooden scow.

Length, 59.0 feet; beam, 17.0 feet; capacity, 100 tons.

'Sir Richard' dredge.

Length, 80.0 feet; beam, 28.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

Capacity of bucket, 3 cubic yards.

(Dredge attended by tug *St. Paul*.)

Dredge 'Industry.'

Length, 125 feet; beam, 43 feet; greatest working depth, 35 feet.

Daily rate of dredging in soft material, 3,000 cubic yards.

" " ordinary material, 2,000 cubic yards.

" " hard material, 1,500 cubic yards.

Dredge 'Quebec.'

Length, 108 feet; beam, 36.8 feet; greatest working depth, 40 feet.

Daily rate of dredging in soft material, 4,000 cubic yards.

" " ordinary material, 2,700 cubic yards.

" " hard material, 1,800 cubic yards.

Dredge 'No. 3' (Building and almost completed).

Length, 60 feet; beam, 22 feet; greatest working depth, 14 feet.

Daily rate of dredging, ordinary material, 400 cubic yards.

SESSIONAL PAPER No. 19

'Richelieu' dredge.

Length, 70.0 feet; beam, 22.0 feet.

Daily rate of dredging in ordinary material, 400 cubic yards.

(Attended by tug *Ottawa* and 2 dump scows.)

'Steam stone lifter' centre well.

Length, 25.0 feet; beam, 23.0 feet; depth, 4.0 feet.

(Attended by 130-foot scow as coal tender.)

'St. Maurice' dredge.

(A small dredge used on the River St. Maurice only.)

Tug *Annette* and stone lifter.

'Lake St. John dredge.'

Length over all, 75 feet; width, 25 feet; draft, $2\frac{1}{2}$ feet; greatest working depth, 18 feet.

Tug *Marie-Louise* on Lake St. John.

'International' dipper dredge.

Length, 109.6 feet; beam, 41.0 feet; greatest working depth, 60.0 feet.

Daily dredging in hard material, 1,000 cubic yards.

" " ordinary material, 1,500 cubic yards.

" " soft material, 2,000 cubic yards.

'Progress' dredge.

Length, 90.10 feet; beam, 39.2 feet; greatest working depth, 30.0 feet.

Daily rate of dredging in hard material, 500 cubic yards.

" " ordinary material, 1,000 cubic yards.

" " soft material, 1,500 cubic yards.

(Dredge attended by tug *Monitor* and 3 scows.)

'Mattawa' dipper dredge.

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 25.0 feet.

Daily rate of dredging in ordinary material, 1,000 cubic yards.

(Dredge attended by tug *Catherine* and 2 dump scows.)

'Dredge No. 1' on River St. Louis Feeder.

Length, 55.0 feet; beam, 20.0 feet; greatest working depth, 12.0 feet.

Daily rate of dredging, 300 to 400 yards.

'Dredge No. 2' dipper dredge.

Length, 60.0 feet; beam, 22.0 feet; greatest working depth, 14.0 feet.

Daily rate of dredging, ordinary material, 400 cubic yards.

'Dredge No. 6' dipper dredge.

Length, 97 feet; beam, 36.4 feet; greatest working depth, 35 feet.

Daily rate of dredging, ordinary material, 1,500 cubic yards.

(Tugs *Speedy*, *Montmorency*, *Blanche*, Schooner *Rutherford*.)

9-10 EDWARD VII., A. 1910

MANITOBA.

'Winnipeg,' dipper dredge.

Length, 71.0 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

“ “ ordinary material, 500 cubic yards.

“ “ soft material, 800 cubic yards.

'Manitoba' dipper dredge.

Length, 60 feet; beam, 24 feet.

(Dredge attended by tug *Victoria* and two dump scows.)

'Priestman' barge and clam-shell dredge.

A small dredge, old and not much good.

'Crane' orange peel dredge.

A scow fitted up as a dredge.

'Assiniboine' dredge.

Length, 50 feet; width, 30 feet, and depth 4.5 feet.

Orange peel bucket, 1½ yard capacity.

SASKATCHEWAN.

'Last Mountain Lake Dredge' (Dipper dredge.)

Length, 60 feet; beam, 22 feet; greatest working depth, 14 feet.

Daily output, ordinary material, 400 cubic yards.

BRITISH COLUMBIA.

'King Edward' propelling hydraulic dredge.

Length, 125 feet; beam, 32 feet; greatest working depth, 40 feet.

'Mud Lark' dipper dredge.

Length, 90 feet; beam, 30 feet; greatest working depth, 40 feet.

Daily rate of dredging in hard material, 300 to 400 cubic yards.

“ “ ordinary material, 500 to 600 cubic yards.

“ “ soft material, 800 cubic yards.

(Dredge attended by tug *Princess* and three dump scows.)

'Nakusp' self-propelling dipper dredge.

Length, 80 feet; beam, 25 feet; boom, 50 feet; dipper capacity ¾ foot.

SESSIONAL PAPER No. 19

'Fruhling' hydraulic hopper and suction dredge (steel hull).

Length, 187.0 feet; breadth, 34.6 feet; moulded depth, 14.9 feet; draft, loaded, 13.1 feet; dredging depth, 45.0 feet.

Capacity of hoppers, 785 cubic yards.

Load capacity, 1,000 tons.

Indicated horse-power, 1,000.

Speed, loaded, 9 knots.

Speed, light, 12 knots.

Rate of dredging, 1,500 cubic yards per hour.

Dredge 'Ajax.'

Length, 110 feet; beam, 38 feet; least working depth, 14 feet; greatest working depth, 40 feet.

Daily output from 800 to 1,400 cubic yards, according to nature of material.

Dredge 'Pelican.'

Length, 58 feet; beam, 24 feet; draws about 1 foot 6 inches water.

Orange peel bucket, will work in any depth of water.

Daily output, about 200 cubic yards.

Snag boat 'Cygnet.'

Length, 100 feet; beam, 27 feet; draws about 3 feet 2 inches water.

Snag scow on Naas River.

Length, 60 feet; beam, 20 feet 6 inches; depth, 4 feet 6 inches; draws about 2 feet of water.

Tug-boat 'Muskrat II.'

Length, 80 feet; beam, 20 feet.

'Samson' snag boat.

Length, 115 feet; beam, 30 feet.

'Petrel' and tender.

Length, 85 feet; beam, 17 feet; horse-power, 280.

9-10 EDWARD VII., A. 1910

DRY DOCKS.

The Dominion government owns and operates three dry docks, viz.: the Lorne dry dock, at Lévis, province of Quebec; the Kingston dry dock, at Kingston, province of Ontario; and the Esquimalt dry dock, at Esquimalt, near the city of Victoria, in British Columbia.

LEVIS DRY DOCK.

During the last fiscal year, this service was kept in an efficient manner the staff was employed in docking and undocking the twenty-six vessels which occupied the dock. The total expenditure of \$20,891.10 was incurred in connection with the usual repairs required for the proper maintenance of the property.

Total amount of revenue, \$29,027.96.

KINGSTON DRY DOCK.

During the past fiscal year, the dock has been occupied 240½ days by 53 vessels, representing a total tonnage of 24,425. The dues collected amounted to \$10,593.84, while the expenditure of \$8,324.11 was incurred in connection with staff wages, maintenance and repairs to caisson and derrick.

ESQUIMALT DRY DOCK.

During the year ending March 31, 1909, the dock was occupied 158 days, twenty-two ships having been docked, with an average gross tonnage of 63,829 tons; the revenue collected was \$20,583.36.

The sum of \$13,671.37 was expended in staff wages, in repairing the drains and the sheds, in cleaning and painting the caissons.

RIVIERE DU LIÈVRE LOCK.

This lock is situated at Pouppore, on the Rivière du Lièvre, 12 miles above Buckingham, in the county of Labelle. It is built to overcome the Little Rapids at that place and to drown the Long rapids above, thus giving slack water navigation as far as High falls, a total distance of 24 miles from Buckingham.

At its session of 1908, parliament appropriated \$3,200 towards repairs and improvements to this work.

The extraordinary spring freshet in 1908 scoured a channel around the west abutment of the dam. In May, a cut-off gravity dam was built to protect the bank at this point. The dam is sheeted and puddled. The backfilling of riprap was placed, from September 1 to 12th, and from January 18 to February 4; the lock gates were repainted; the sheeting of the dam was repaired and wrought iron plates, to protect the timber slide, were procured; the upper boom was moved upstream; a new training boom was built, and two boom piers were constructed.

Total expenditure during the fiscal year 1908-9 amounted to \$5,105.56.

YAMASKA LOCK.

In 1886, a lock and dam was constructed at Ile Cardin, in the Yamaska river, 1½ miles below the village of St. Michel d'Yamaska. The lock gives a lift of 5¾ feet.

SESSIONAL PAPER No. 19

The following are the commercial statistics of the navigable section of the river at the outlet, registered at the lock during the season of 1908:—

	Tons.
36 steamboats, general merchandise.. . . .	1,672
23 sailing boats, general merchandise.. . . .	433
21 lighters, general merchandise.. . . .	733
95 tugs.. . . .	360
Total.. . . .	3,238

During the low water season, the main dam had been repaired as also the eastern pier of the lock, by renewing the covering and sheathing, and placing some stone rip-rap.

Total expenditure during the fiscal year 1908-9:—

Staff and maintenance.. . . .	\$1,596 99
Repairs.. . . .	1,117 81

9-10 EDWARD VII., A. 1910

SLIDES AND BOOMS.

The Dominion government owns and operates slides and boom works, built to facilitate the passage of square timber, round logs, flatted and dimension timber, &c., on the River Ottawa and tributaries; on the St. Maurice river; the Saguenay river, and at Fenelon Falls and Burleigh Falls on the Trent river.

In the subjoined reports, the superintending engineers of the river works, Messrs. G. P. Brophy, F. X. Lefebvre, and J. C. Taché, give particulars relative to the construction, improvements and repairs carried out under their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year, the expenditure incurred for staff, maintenance, improvements, &c., the quantities of the various descriptions of timber that pass through their works, and other information of general interest and utility to lumbermen and the public at large.

REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, Superintending Engineer.)

OTTAWA, May 1, 1909.

The Chief Engineer,
Department of Public Works,
Ottawa.

SIR,—As requested by you, in your circular letter of March 25 last, I have the honour to submit the following report on the works under my charge, for the fiscal year ended March 31 last.

ORDINARY REPAIRS—STATIONS ON OTTAWA RIVER—MAIN STREAM.

Carillon Station.—The only expenditure at this place was for an inspection of the slide works, and the preparation of an inventory of the tools, booms, &c.

North Chaudiere Station.—At the entrance to the upper slide, new timbers were placed in the guide booms, and considerable of the covering plank was renewed. Portions of the floor of this slide were laid with new plank, after the damaged material had been removed and new false sills had been inserted. The iron straps on the bottom were straightened and secured, while the iron sheathing and straps on the stop-logs were repaired. Five timbers, protected by iron bars, were laid in the bottom of lower slide, at its outlet. The angle plates on the corners of entrance piers of this slide were taken off, repaired and re-set; two special stop-logs were made for the bulkhead, three stop-logs were also made for the waste gate and the piers were raised two courses and filled with stone.

South Chaudiere Station.—At this station, broken booms were repaired; the fastenings of the aprons and guide booms were adjusted, and additional mooring chains were provided. The top of side pier, on north side, near outlet, which had become displaced by excessive high water in the spring of 1908, was replaced. Loose planks in

SESSIONAL PAPER No. 19

the bottom of slides were secured; the boats were repaired and painted; the shed for general storage was extended some 16 feet in length by 25 feet in depth, and the roofs of the other buildings were repaired. Snow was removed from the roofs of the different buildings, and, in order to protect the booms, ice had to be cut from around them.

Chats Station.—Two cross-sills and two longitudinal timbers were placed in the upper apron, after the water had been shut out of the slide. The flooring of the slide was also overhauled, and new material was laid where the old had become too thin for further service.

Portage-du-Fort Station.—The expenditure here was for materials for repairs to the bottom of slide, viz.: 4-inch plank and a timber for a cross-sill; the work being performed by the slide master and his assistant.

Mountain Station.—The outlay at this station was small and was incurred in splicing the guide booms and placing connecting chains in them.

Calumet Station.—The roof of the station house was shingled, the guide booms were spliced, and planking in the bottom of second or long slide was repaired.

Joachim Station.—The expenditure here was for an examination of the condition of the slides, booms and piers and making a list of the property on hand such as ropes, chains, bolts, tools, &c.

TRIBUTARIES OF THE OTTAWA RIVER.

Gatineau River.—The top of a pier supporting the main boom, opposite the station house, was rebuilt. The pier is 23 feet by 12 feet, and the portion renewed was 6 feet in height. An oak snubbing post was set in the pier and iron bars were placed on the side stringers, to prevent the mooring chains from cutting into the timbers.

The highway bridge, across the new canal, was rebuilt. The structure was in a very dilapidated condition, the timbers of the abutments having bulged out of place so much as to render the bridge dangerous for traffic. The clear span, 47 feet in length, is carried by a queen truss of 10-inch by 13-inch pine timbers. The abutments, which are also of pine, rest upon piles driven for the purpose, and are 18 feet in width and 20 feet in height, and extend into the banks on either side some 40 feet. The floor is of 3-inch hemlock, and, with the approaches, is 140 feet in length, with 14 feet of clear roadway. On the upper side of both abutments, are wings filled with stone and carried up sufficiently high to thoroughly protect the foundations of the timber work. Suitable guard rails were erected on both sides, and, at the northern end, the flooring was extended in width to ease the approach, as there is a square turn in the roadway at this end of the bridge.

Precautions were taken, as usual, during the spring months, to free the booms when the ice was moving off the river.

Madawaska River.—At the mouth of the river, two of the piers supporting the retaining boom were sheared off at the water edge by ice shores, and had to be rebuilt. One of these piers is 18 feet by 22 feet and the other 16 feet by 17 feet, both being 12 feet high above the water line. They were filled to the top with stone which had to be quarried for the purpose, and the face of each pier is covered with plank forming a batter, to protect the structures as much as possible from damage from ice and logs.

At Arnprior station, the outlay was for rivet links and rock bolt, as well as for the usual repairs to the tools and boats.

9-10 EDWARD VII., A. 1910

At Flat rapids, extensive repairs were made to the flat dam at the south side of the river. This work is an ordinary flat dam sheeted on the face with planking. A section, 275 feet in length and $7\frac{1}{2}$ feet in height, was built in the new. The front of another section, 182 feet long, was also rebuilt. The sheeting on the face of the remaining portions was patched at many places, and a course of timber, 100 feet long, was placed on the crest. The top timbers of the pier, at east end of dam, were replaced, and 18 cubic yards of stone filling were added to the pier.

At Duck rapids, some of the sheeting on the flat dam was renewed where it had been torn off.

At Chain rapids, stone was removed from the cribwork under the slide, the timbers which were displaced were reset, and after a false bottom had been laid, the ballast was again put in. The ends of the cross-sills were planked and loaded with stone to act as an anchor. Five hundred feet b.m. of 3-inch maple plank were laid in the east side of slide, near the entrance. Several braces were put in the slide, the gains of the stop-logs were patched and the planking on the bulkhead was repaired.

Coulouge River.—At the retaining boom, near Coulouge village, one of the piers was rebuilt from low water mark. The pier is 32 feet by 27 feet at water line, 18 feet by 17 feet at top and 12 feet high.

At High Falls station, a section of the main governing dam, 60 feet in length, was repaired. Two rounds of timber were built and filled with stone. The face was covered with 3-inch birch, 12 feet long. Five new snubbing posts were placed in the piers supporting the guide boom, and the mooring chains were fastened to ties in the bodies of the piers. Five posts of 10 by 10-inch timber, 13 feet long, were set under the slide superstructure. Fifteen cross-sills, thirty posts, fifty braces and a longitudinal stringer were placed in the slide. Sheeting in sides and bottom of slide was patched and iron bars were laid in bottom to protect the flooring. The foot boards were repaired, and seven stop-logs were made for the bulkhead. The shelter house at 'watch point' was covered with 1-inch boards, while the roof of the station house was shingled.

Black River.—At High Falls station, seven posts and forty-three braces were renewed in the slide, while the sheeting in sides, at many places, was patched. At certain points, where the sides are of solid timber and had become gouged out, new material was inserted and the surface exposed to wear was covered with iron. Three bents, 10 feet high, were placed under the slide at a point about 200 feet below the entrance, to take the place of the old one which was damaged. At this place, two extra chains of $\frac{5}{8}$ -inch iron were also set to steady the superstructure. Timbers were fastened to the timbers to stiffen them, and eye bolts of 14-inch iron, 14 feet long, were placed across the slide to which were attached the chains. The chains are some 50 feet long and are anchored to ring bolts set in the solid rock. At the entrance to the slide, a new guide boom was built on the west side. The part immediately above the slide is double and is five sticks in length, held together by 1-inch screw bolts; the remainder, seven sticks long, is single, the different members being connected by skein chains of $\frac{3}{4}$ -inch iron.

At the retaining boom, a post was set in the pier on shore at head, and the boom was lengthened by four sticks connected by suitable chains.

Petewawa River.—At Second Chute station, a snubbing pier was built, on the south side of the river. It is 14 feet square, four courses high and filled with stone. A break in the main governing dam was repaired. The necessary ties and stringers were placed in the dam, and the face was covered with sheeting, 6 inches thick. Damaged sheeting at other places on the dam was renewed. Fifteen pieces of 10 by 10-inch birch, 12 feet long, were laid in the bottom of the slide at its outlet.

SESSIONAL PAPER No. 19

At Third Chute station, the glance pier on south side, above Canadian Pacific Railway Company's bridge, where a 'washout' occurred, was repaired. New timbers were substituted for those carried away and the proper stone filling was placed in the pier. Twelve pieces of timber were set in the guide booms, and the top of a pier, at upper end of guide boom, was repaired. The sheeting on the different guide booms were also patched where found necessary.

At Crooked Chute Station, the south side of the slide, 155 feet long, was rebuilt with 11-inch timber. The floor of slide was patched and iron bars were placed on both of the entrance piers. The pier at foot of the slide on south side, was rebuilt, as was also the one at entrance, on the same side. The former is 15 feet long, 8 feet wide, and 5 feet high, and the latter 25 feet long, 8 feet wide and 4 feet high. A timber was set along the crest of the governing dam, as it had sagged somewhat and allowed too much water to escape, to the detriment of the proper working of the slide.

At McDonald's station, iron bars were placed on the sides of entrance piers, to protect timbers from being damaged by abrasion by logs and timber.

Dumoine River.—The roof of the station house at High Falls was shingled, and the bottom of slide at outlet was repaired where the timbers had been damaged by passing logs.

CONSTRUCTION.

Black River.—Just below the outlet of High Falls slide, the east bank of Black river had become much worn by the action of the water, which made the bed of the river unusually wide and consequently very shallow at this particular place, so that great difficulty was experienced in passing logs and timber over the shoals; it became necessary to adopt means to conserve the water and prevent it from spreading so much, that the output of the slide might be passed expeditiously. A glance pier was built parallel to the west bank of the river, 237 feet in length, 12 to 14 feet in width at base, 8 feet at top and $7\frac{1}{2}$ feet in height. The pier narrows the channel by more than one-half, and no further trouble may be expected at this place.

GENERALLY.

In the spring of 1908, the water in the Ottawa river and tributaries reached its maximum height about May 16, being rather above the average height of other years. It kept up well during the months of June and July, but after the 1st of August it fell rapidly, and, by the end of October, it had receded to a pitch much lower than for many years before. Most of the drives on the tributaries had reached the main river before the water fell very much, so that little difficulty was encountered in that respect.

STATEMENT of the number of pieces of square timber, saw-logs, &c., that passed through the government slides and works on the Ottawa river and its tributaries, during the fiscal year ended March 31, 1909.

	Pieces.
Square timber	3,296
Saw-logs	4,026,487
Boom and dimension timber	61,529
Cedars	89,932
Railroad ties	558,379
Fence posts	74,435
	4,814,058

Also 60,190 $\frac{1}{2}$ cords of pulpwood.

The revenue accrued on the above was \$40,390.99.

9-10 EDWARD VII., A. 1910

STATEMENT showing Expenditure for Repairs and Construction on Ottawa River Works for Fiscal Year ended March 31, 1909.

Names of Stations.	Province.	Electoral District.	EXPENDITURE.		EXPENDITURE.		EXPENDITURE.	
			\$	cts.	\$	cts.	\$	cts.
Carillon Station.....	Ontario. Quebec. " " " " Quebec. " " " "	County of Prescott.....	.....	43	10	.....	43	10
North Claudiere Station ..		District of Wright ..	714	81	188	77	903	58
South ..		City of Ottawa.....	508	00	445	45	953	45
Chats Station.....		County of Carleton.....	101	50	31	13	435	63
Portage du Fort Station ..		North Riding County of Renfrew ..	43	92	.....	.....	43	92
Mountain Station.....		County of Pontiac.....	15	00	.....	.....	15	00
Calumet Station.....		" "	92	19	.....	.....	92	19
Jouchim Station.....		" "	.....	.....	150	80	150	80
.....		.....	.....	1,478	42	.....	859	25
.....								
Gatineau River.....	Quebec.....	District of Wright ..	259	41	2,398	11	2,657	52
Madawaska River.....	Ontario.....	South Riding Co. Renfrew ..	822	76	972	98	1,795	74
Conlonge River.....	Quebec.....	County of Pontiac.....	48	00	791	83	839	83
Black River.....	" "	" "	766	00	510	43	1,276	43
Petawawa River.....	Ontario.....	North Renfrew and Nipissing.....	1,055	46	574	33	1,629	79
Dunrobie River.....	Quebec.....	County of Pontiac.....	100	50	74	14	174	64
.....	.....	.....	.....	.....	3,052	13	5,321	82
.....	.....	.....	.....	.....	.....	.....	.....	8,373 95
.....	.....	.....	.....	.....	.....	.....	.....	10,711 62
.....	.....	.....	.....	.....	2,021	52	340	55
.....	.....	.....	.....	.....	.....	.....	.....	2,362 07
.....	.....	.....	.....	.....	.....	.....	.....	13,673 69

JOS. KENT,
Accountant.

REPORT ON ST. MAURICE RIVER WORKS.

(By F. X. Lefebvre, Superintending Engineer.)

EUGENE D. LAFLEUR, Esq.,

Chief Engineer, Department of Public Works,
Ottawa.

SIR,—I have the honour to submit the following report on the works done under my supervision, during the fiscal year ending March 31, 1909.

Last spring, the freshets did much damage to our booms, especially at Petites Piles, where they caused the loss of several booms of from three to five feet in width by from 25 to 120 feet in length, and where eight large booms 100 feet long and six feet wide, completed only a few months before, went right through over the Grand Mère falls. Out of the eight booms above mentioned, seven were caught at Pointe a Bernard, hardly injured, but we had to take them apart in order to ship them by rail; three of them to Grandes Piles and three others to Grand-Mère, leaving one to be used at Pointe a Bernard.

Petites Piles.—A length of about 2,300 feet of spruce booms, three feet in width by 12 inches thick, was built, a house for the use of the boom-master at Petites Piles was also constructed; repairs were made to the booms that were damaged during the freshets and that were in good shape enough to be repaired; coupling and guide chains were also bought.

Grand-Mère.—The three booms which had been transported here from Shawinigan were rebuilt and towed to Petites Piles.

Rapids des Hetres.—On February 22 last, repairs were commenced on the dam situated on the west side of the St. Maurice river, which dam was partly demolished last spring by the freshet; a scow measuring 45 feet long by 10 feet wide by two feet deep, was also built, to be used while stretching the booms and while taking them away for the winter.

Pointe a Bernard.—A dam about 150 feet long by 13 feet wide, was erected at the head of Melville island and repairs were made to the Shawinigan slide.

Lower Shawinigan Bay.—Two piers were rebuilt from low water line up, one at the foot of the Shawinigan falls and the other near the Pointe a Chevalier.

The glance boom below the Pigeon island was also planked with three-inch pine deals.

The total expenditure during the last fiscal year amounted to \$28,062.94.

9-10 EDWARD VII., A. 1910

REPORT ON THE SAGUENAY RIVER BOOMS.

(By J. C. Taché, Superintending Engineer.)

Saguenay booms are on the Saguenay river, about six miles above Chicoutimi.

The work done during the fiscal year 1908-9 was the repairing of the boom which had been damaged last spring on account of the extraordinary high water; 'La Cie de Pulpe de Chicoutimi's' booms, which were stretched inside the government booms, gave way, and their chains and anchors got mixed up with the government booms; this was the cause of the damage.

Some 1,251 feet of booms were constructed this spring, in spruce, and anchors and chains were bought.

Total amount of expenditure for maintenance, staff and repairs, \$2,402.84.

SESSIONAL PAPER No. 19

BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal government has confined itself, as a rule, to take under its exclusive control and make provisions towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the Northwest Territories, the government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highways of national importance, which neither the municipalities to be more immediately benefited by the structures, nor the territorial authorities most directly concerned, could be expected to erect and maintain at their sole expense.

During the last fiscal year, works have been executed on the following:—

ONTARIO AND QUEBEC.

BRIDGES AT OTTAWA, AND ROADWAY AND BRIDGE APPROACHES BETWEEN OTTAWA AND HULL.
—ORDINARY REPAIRS.

Chaudiere Slide Bridge.—The foundations for the gratings, at the south end of this bridge, were renewed with concrete. The guard-rails and sides of the bridge were painted. At the Middle street approach, the sandstone pavement was taken up and relaid, as the foundations had settled somewhat. A concrete pier was built under the abutment at this approach, where the base was undermined, and the top of the abutment was pointed with cement mortar.

Union Bridge.—The planking on this bridge was patched, and the iron truss was covered with 'Esco steel coating.'

Hull Slide Bridge.—The expenditure upon this bridge was for the removal of debris from the roadway.

Roadway and Bridge Approaches Between Ottawa and Hull.—The pavement along the guard-rail of the Ottawa Electric Railway was levelled, and new openings were made throughout the whole length of the guard for drainage. In places where the pavement had settled, on account of the foundations having been washed out, the voids were filled with stone. The roadway where it crosses the stone dam, was raised five inches, for a distance of over 100 feet, to improve the grade at this place. The sidewalks along the thoroughfare were patched, and the water holes were kept clean.

The roadways of the bridges and causeway leading to Hull were all cleaned quite frequently, through the summer season, and during the winter months, surplus ice and snow were removed from both the roadways and sidewalks, and sand was deposited upon the latter, when in a slippery condition.

EXTRAORDINARY REPAIRS.

Devil's Hole, Hull Causeway.—At this place, the side of the roadway, which was supported by a rough wooden cribwork built many years ago, gave way, and threatened the destruction of a portion of the roadway. A cofferdam was built to relieve the

9-10 EDWARD VII., A. 1910

strain on the causeway, and a concrete wall was built along the face, the rear being filled with stone. The retaining wall is 60 feet in length, 14 feet in height and is surmounted by a concrete curb into which are embedded the iron standards which carry the pipe-guard railing. Suitable openings were made in the base of the curb to properly drain the roadbed.

Pond Creek Bridge, Gatineau.—Ponk creek is the outlet of Leamy's lake, and this bridge spans that stream, being on the main highway leading from the city of Hull to the village of Gatineau Point. The bottom chord on the west side of the bridge became broken, and allowed the floor to sag about 14 inches. The structure was in a very dangerous condition. The floor beams were drawn up by temporary screw bolts and longitudinal timbers, and thus held in position until the more permanent repairs were executed. Two diagonal rods of 1½-inch iron were placed in each truss, oak bevel pieces giving the proper angle beneath the chord. Angle plates were also placed on the four corners of the trusses to better distribute the stress. Vertical rods of 1-inch iron and extra pieces of pine were placed in the trusses to stiffen them. The perpendicular timbers were spliced with new timbers, reinforced with iron straps.

Portage du Fort Interprovincial Bridge.—This bridge spans the Ottawa river at the village of Portage du Fort.

The plank which was of pine, 16 feet long and 3 inches thick, was laid diagonally, giving a width on the square of 12 feet for traffic. The length covered was 400 feet. The rip-rap, at the southerly approach, on west side, was also repaired, and the guard railing on the same side, was strengthened by placing extra posts and braces in position.

Chapeau Bridge.—This bridge spans the Culbute channel of the Ottawa river, at the village of Chapeau, and connects Allumette island with the mainland on the Quebec side. The structure is in a very dilapidated condition, and repairs have to be made from time to time in order to prevent the bridge from falling into the river. Two stringers were put under the 'draw' span, and these were supported by two bents, with diagonal braces. The top of this span was covered with two courses of plank, the lower one being 3 inches and the top 2 inches in thickness. Two bents were also placed at pier No. 2, and the planking on the long approach from the Quebec side was patched at several places where it required attention.

Interprovincial Bridge at Rapides des Joachims.—At the Joachims rapids, there are two bridges which span two channels of the Ottawa river. The bridge across the slide channel is 307 feet in length and the one across the main channel is 432 feet, the width of both being 21½ feet. The roadway plank having become worn considerably, it became necessary to lay new material. The old plank was removed where excessive wear had occurred, and new pieces were laid to form a uniform surface, and then a covering of 2-inch pine was placed diagonally, forming a roadway 14 feet in width. All the steel work of both bridges received a coat of 'Esco' paint.

Four tiers of boards and a cap board were placed on the posts, at the approaches to the bridges, the cap board being set at a bevel by cutting off the tops of the posts at the proper angle. The length of the guard fencing is 1,290 lineal feet.

SESSIONAL PAPER No. 19

STATEMENT of Expenditure on Roadways and Bridges for Fiscal Year ended March 31, 1909.

Name of Work.	Province.	Electoral District.	EXPENDITURE.		EXPENDITURE.		EXPENDITURE.		
			\$	cts.	\$	cts.	\$	cts.	
April 1 Nov. 30, 1908			Dec. 1 '08 Mar. 31, '09		Apr. 1 '08 Mar. 31, '09				
<i>Bridges at Ottawa and Roadway and Bridge Approaches between Ottawa and Hull:</i>									
<i>Ordinary repairs—</i>									
Chaudiere Slide Bridge.....	Ontario.....	City of Ottawa.....	1,015	29	204	08	1,219	37	
Union Bridge.....	Ont. and Que.	City of Ottawa and District of Wright.	968	75	128	42	1,097	17	
Hull Slide Bridge.....	Quebec.....	District of Wright.....			8	50	8	50	
Roadway and bridge approaches between Ottawa and Hull.....	Ont. and Que.	City of Ottawa and District of Wright	1,222	66	409	17	1,631	83	
					3,206	70	750	17	
<i>Extraordinary Repairs—</i>									
Devil's Hole, Hull causeway.....	Quebec.....	District of Wright.....	1,632	38	277	23		3,456	87
Pond Creek Bridge.....	"	"	360	93				1,909	61
Portage du Fort Bridge.....	Ont. and Que.	South Renfrew and Pontiac	135	50	388	40		360	93
Chapeau Bridge.....	Quebec.....	County of Pontiac.....	271	60				523	90
Joachim Bridge.....	"	"	845	58	1,231	28		271	60
								2,079	86

OTTAWA, May 1, 1909.

JOS. KENT,
Accountant.

9-10 EDWARD VII., A. 1910

SASKATCHEWAN.

SHELLMOUTH BRIDGE OVER ASSINIBOINE RIVER.

The two piers and abutments of this bridge were completed in December, 1907, by contract with the J. McDiarmid Company, of Winnipeg, and the contract for the steel superstructure was let on October 23, 1907, to the Algoma Steel Bridge Company, of Sault Ste. Marie, Ont., for the amount of \$20,000.

The contract called for the erection of two through spans of 80 feet each and one through span of 160 feet.

The erection of this bridge was started on June 25, 1908, and was completed on August 22, of the same year.

The approaches have been constructed by the Shellmouth rural municipality at their own expense; they are of pile-trestle construction.

During the fiscal year ended March 31, 1909, the expenditure amounted to \$20,442.74.

ALBERTA.

EDMONTON BRIDGE.

Edmonton bridge connects the counties of Edmonton and Strathcona at the city of Edmonton, the population of which is 20,000.

The approaches to the Edmonton bridge had become so dangerous that the necessity of grading and raising their elevation to the bridge floor became imperative. Gravel or broken stone were selected as the most suitable material to insure permanent work. Arrangements were concluded with the city of Edmonton whereby they undertook to do the work and render a statement of cost. The top part as well as the bottom part of the flooring having become worn out, repairs had to be proceeded with from one end to the other.

The total expenditure during the last fiscal year amounted to \$1,094.38.

STORAGE OF WATERS.

For a number of years, the question of the conservation of waters for the improvement of navigation or the production of power, has received attention from civil engineers and other officers of this department.

Some few works of this character have been constructed and are in operation but since this branch of the service has developed and requires special efforts to make provision for the near future and keep pace with the rapid development of the country, it has been decided to institute a complete and exhaustive study of our natural resources so that they may be improved and developed to their greatest capacity and become the means of further building up the trade and commerce of the Dominion.

LAKE NIPISSING, ONT.

Lake Nipissing is the catch basin of the French river which empties into Georgian bay.

Last year an effort was made to place dams at the foot of the lake for the purpose of holding back and regulating the flow of waters. These dams were not properly placed and did more damage than good.

During the past fiscal year, a survey and examination was made, and it is the intention of the department to construct proper dams to regulate the flow of water from the lake.

At Monetville, on Shanty lake, four miles beyond the head of lake navigation, a roadway was constructed and two coffer dams placed so as to give 6 feet of navigation from Lake Nipissing to Shanty lake.

RIVIÈRE DU LIÈVRE, P.Q.

The Rivière du Lièvre flows through the county of Ottawa, and empties into the Ottawa river at Buckingham, 18 miles below Ottawa.

The river was navigable, at high water, from Buckingham to High Falls, a distance of 22 miles, but during low water, navigation was checked at the foot of Little rapids, 12 miles above Buckingham. To improve the navigation and raise the level of the river, it was decided, in 1886, to construct a lock and dam at the Little rapids. The lock is 150 feet long, between gates, 32½ feet wide at the bottom; has eight feet of water on the mitre sill, and a lift of 13¾ feet at extreme low water.

TEMISKAMING DAM, P.Q.

During the month of March, 1909, an examination was made to obtain foundations for the dam, to be built, at the foot of Lake Temiskaming.

Eight test pits were sunk; when it was found that there was no bed rock available but that a good strong boulder formation extended down at least 40 feet, it was decided to lay a monolithic slab of concrete, 3 feet thick, across the river with a cut-off wall of indefinite depth along the up-stream and down-stream edges.

Upon this platform, piers, 20 feet apart, will be built and sluiceways so arranged as to be closed by stoplogs of British Columbia fir.

It was, at one time, thought advisable to install stoplogs of reinforced concrete, but after careful examination the British Columbia fir stoplogs were adopted.

9-10 EDWARD VII., A. 1910

A contract for the construction of this dam was awarded to Messrs. Kirby & Stewart on schedule of rates, for a sum amounting approximately to \$108,000.

The order in council accepting the tender was passed on March 13, 1909.

YAMASKA, P.Q.

The Yamaska river takes its rise in the county of Brome, is the outlet of several large lakes and has a course of about 90 miles then empties into Lake St. Peter, 8 miles below Sorel.

To render the river navigable, for vessels of moderate draught, up to Belle Point or Rapide de la Grosse Roche, a distance of 20 miles, it was decided to construct a lock and dam at Ile a Cardin, about $4\frac{1}{2}$ miles above the mouth of the river.

The work was completed in 1886, and gives a rise of $5\frac{1}{4}$ feet. Dredging was done at the shoal below the lock and the navigation is very satisfactory.

ST. ANDREWS LOCK, MAN.

These rapids extend over a distance of about 10 miles, the lower part being about 17 miles below the city of Winnipeg.

To overcome these rapids and give eight-foot navigation on the Red river, it was decided, in 1901, to construct a lock and dam.

The lock is 215 feet long, 45 feet wide and carries a depth of water over the mitre sill of 9 feet, is built of concrete with wooden gates.

The dam is also built of concrete, with the movable portion and a service bridge of steel.

It is expected that the work will be ready for navigation in the spring of 1910.

LAST MOUNTAIN LAKE, SASK.

Last Mountain lake is situated in the counties of Regina and Humboldt.

In 1905, petitions were presented to the department, praying that a dam be constructed at Craven, and during the winter of 1905-6, a pier and timber dam were built below the outlet of the lake on the Qu'Appelle river, for the purpose of regulating the flow of water. The first cost was about \$1,000; the dam was damaged and rebuilt in 1906.

The work was intended to regulate the flow of the waters and raise the level of the lake so as to improve navigation, and after construction, the fishery inspector of the district, commended the department for raising the level which improved the waters and increased the supply of whitefish.

The department is now making preparations to dredge the lake and outlet, and during the past fiscal year, in order to meet the requirements, a regular dredging fleet has been constructed, composed of the following vessels:—A steel frame tug, two scows and a dredge hull, dredge machinery, boiler and engines. All the work is practically completed, excepting a small percentage of work to be done to the living quarters of the dredge, and the vessels will be launched at the opening of navigation.

Total amount expended, \$1,766.37.

CEMENT LABORATORY.

OTTAWA, April 17, 1909.

E. D. LAFLEUR, Esq.,

Chief Engineer, Public Works Department.

SIR,—I have the honour to transmit herewith the annual report of the cement laboratory for the fiscal year ended March 31, 1909.

I have the honour to be, sir, yours obediently,

(Sgd.) GEO. E. PERLEY,
Engineer in Charge.

During the last twelve months, or since March 31, 1908, all samples of cement and other building material submitted to this branch of the department have been fully tested and reported upon.

In the past twelve months, 1,454 samples were submitted to this branch for test purposes, which number shows an increase of 234 samples or 20.35 per cent over the same period last year.

Of the 1,454 samples tested, 1,250 were accepted and 204 rejected; of the 204 condemned, 144 were Samson Portland cement, 26 were Hercules Portland cement, 18 were Alpina Portland cement, 15 were Star Portland cement and one was sand.

The 1,454 samples received were from the following:—

Engineers of the Public Works Department.. . . .	1,358
Outside engineers.. . . .	57
Cement manufacturers.. . . .	18
Contractors.. . . .	10
Architects of the Public Works Department.. . . .	5
Marine and Fisheries Department.. . . .	3
Deputy Minister, Public Works Department.. . . .	2
Members of parliament.. . . .	1

The 1,454 samples received were of the following brands:—

Samson Portland cement, manufactured in Owen Sound, Ont.	1,054
Star Portland cement, manufactured in Malbank, Que. . . .	125
International Portland cement, manufactured in Hull, Que. . . .	64
Belleville Portland cement, manufactured in Belleville, Ont. . . .	55
Monarch Portland cement, manufactured in Lakefield, Ont., and Montreal.. . . .	35
Hercules Portland cement, manufactured in Owen Sound, Ontario.. . . .	27
Maple Leaf Portland cement, manufactured in Atwood, Ont. . . .	26
Alpina Portland cement, manufactured in Alpina, Mich. . . .	18
Exshaw Portland cement, manufactured in Exshaw, Alta. . . .	12
Lehigh Portland cement, manufactured in Belleville, Ont. . . .	7
Peters Portland cement, manufactured in England. . . .	5
Imperial Portland cement, manufactured in Owen Sound, Ontario.. . . .	15

9-10 EDWARD VII., A. 1910

Samples of sand..	6
Vulcan Portland cement, manufactured in Montreal, Que..	1
Buffalo Portland cement, manufactured in Calgary, Alta..	1
Sample of marl..	1
Sample of clay..	1
Sample of limestone..	1

The principal works from which the above-named samples were received were:—

- St. Andrews rapids lock and dam, Manitoba.
- Breakwater at Cow Bay, Port Morien, N.S.
- Breakwater at Goderich, Ont.
- Wharf at Sand Point, Ont.
- Breakwater superstruction at Port Stanley, Ont.
- Dam at Chaudiere falls, Hull, Que.
- Quebec harbour improvements, Quebec, Que.
- Breakwater at Bayfield, N.S.
- Revetment wall, Tecumseh Park, Chatham, Ont.
- Ice piers in River St. James, Laprairie, Que.
- Wharf, Lake Megantic, Agnes, Que.
- Wharf, Southampton, Ont.
- Breakwater at L'Ardoise, N.S.
- Breakwater at Neil's Harbour, N.S.

In the past year, 8,670 briquettes and 93 chemical analysis and 469 specific gravity tests were made in this laboratory, which number of briquettes, chemical analysis and specific gravity tests show a considerable increase over last year.

PART IV.—APPENDIX 'A.'

INTERIM REPORT

ON THE

GEORGIAN BAY SHIP CANAL SURVEY

BY

C. R. Coutlee, C.E.

GEORGIAN BAY SHIP CANAL SURVEY,
DEPARTMENT OF PUBLIC WORKS OF CANADA,
OTTAWA, April, 1909.

A. ST. LAURENT, Esq.,
Asst. Deputy Minister, Public Works Department,
Ottawa.

SIR,—I have the honour to forward a report on the work performed by the Georgian Bay Canal staff during the fiscal year 1908-9.

GEORGIAN BAY SHIP CANAL SURVEY.

At the close of March, 1908, about half the plans in connection with this report had been completed and some had been lithographed, proofed and printed. These were for the most part general plans. The present fiscal year opened with a mass of work on detailed plans of locks and other structures. With the development of these details, the building up of the report continued; first the part dealing with alternative lines in rear of Montreal, at Bryson and at Pembroke was finally settled; then began a restudy of the storage and flow question which extended through the remainder of the year.

METERING.

The month of May, 1908, was taken up with the metering of the flow of the main river and its tributaries. During former years, the river had been exceptionally low, but 1908 reached almost a record for high water, and in the autumn for low water. The occurrence was taken advantage of and all the tributaries were measured and later on examined in detail during the low stage.

INTERIM REPORT.

During the month of June, the details of location and structures had so far advanced that an interim report was prepared. This presented the cost in detail of each proposed reach of the waterway and was completed by first of July—the first reliable estimate after fifty years of discussion.

DEVELOPMENT OF VALLEY.

Notes regarding the development of the Ottawa valley were gathered from a number of sources, while the water fluctuations and subdivisions of the drainage area were being examined.

STORAGE.

After the first week in August till the end of September, work was practically confined to the drainage area and a comprehensive system of storage. This was dependent upon a decision that even at highest spring flood there would not be a current greater than three feet per second in any part of the proposed route. Restricted sections of the river were therefore fixed and the flow they could pass at a velocity of three feet determined. Above such points, storage basins were sought of sufficient capacity to hold back the overplus of flow during the high water period. The restrained water would then become a reserve upon which to drain for power

9-10 EDWARD VII., A. 1910

purposes during the autumn and winter. While this part of the report was under consideration the lithographed plans of structures and details were being proofed and a survey for proposed dredging in Aylmer lake was also under way.

CHAUDIERE FALLS, OTTAWA.

The remarkably low stage of the Ottawa during the autumn of 1908 and the winter of 1909, was critically felt by the power owners at the Chaudiere falls. It became necessary for the department to divide the flow between the various companies and Mr. Matheson was detached for this service shortly after his return from East River, N.S., in December, 1908, till March, 1909.

EAST TEMPLETON, QUE.

The steamboats plying below the city of Ottawa were troubled during the very low stages last autumn by the seant water over the Green shoals near the lighthouse opposite Templeton wharf, Ottawa county, Quebec. It was proposed to dredge a new channel corresponding with that laid down for the 22-foot navigation. Borings were taken over the area and a range line marked upon the ground. Messrs. Davy and Lamoureux were detached for this duty during February.

STORAGE.

As before noted, an examination of the storage possibilities of the Ottawa watershed was continued throughout the year. This began with studies of plans available and, during May, meterings of flow were made, as follows:—

LIST of Gauging, 1908, taken by D. H. Philp.

Locality.	Date.	Gauge.	Discharge c. f. s.	Remarks
Petawawa.....	May 18, '08	3.7	6994.	Gauge above C. P. R. bridge.
Bonnechère.....	" 19, '08	9.45 (?)	3901.	" at electric power dam ?
Madawaska.....	" 19, '08	36.2	18222.	" zero handrail of bridge.
"	July 15, '08	41.5	2730.	" " " "
"	Sept. 8, '08	43.8 estimated.	500.	" " " "
Mississippi.....	May 20, '08	?	2862.	16.8 ft. below base rail G. T. R. bridge.
Rideau.....	" 13, '08		9409.	9.55 ft. below top south abutment.
South Nation.....	" 23, '08		1016.4	Gauge torn out.
Gatineau.....	" 7, '08	213.16	47920	" at Chelsea.
"	" 12, '08	214.46	58459.	" "
"	" 15, '08	214.67	63542.	" "
Lievre.....	" 21, '08	.. .. .	27588.	W. S. 3 ft. below top pier bth falls.
Blanche (Thurso)..	" 27, '08	1.2	448.9	Gauge set North Nation Mills.
North Nation	" 28, '08	6.2	3649.	
Rouge	" 29, '08	6.5	12163.	
Besserer's.....	" 6, '08	144.09	145246.	" foot Rideau locks.
"	" 11, '08	146.13	185719.	" " " "
"	" 14, '08	147.13	198660.	" " " "
Chute à Blondeau.	June 13, '08	136.85 up Gren.	168009.	
		92.49 " Caril.		
		136.35 " Gren.		
Ste. Anne's... ..	" 15, '08	91.49 " Caril.	42917	
		75.9 " Ste. Ann.		
Vaudreuil	" 17, '08	75.65 " Ste. Ann.	39280.	
		134.93 " Gren.		
Ste. Geneviève....	" 23, '08	89.82 " Caril.	32379.	
		74.82 " Ste. Ann.		
Dutchman.....	" 20, '08	135.52 " Gren.	32392.	
		99.49 " Caril.		
		75.23 " Ste. Ann.		
Ste. Rose.....	" 18, '08	135.68 " Gren.	17011.	
		90.82 " Caril.		
		75.48 " Ste. Ann.		

SESSIONAL PAPER No. 19

MEMO. RE GAUGING OF OTTAWA RIVER AND TRIBUTARIES, 1908.

Petawawa River.—A gauging of this river was made from the steel road-bridge, just above the first chute on the Petawawa, on May 18, 1908. Gauge just above the Canadian Pacific Railway bridge read 3·7 or elevation 103·7, the zero of gauge being assumed at 100·0. This gauge was never tied in to the Georgian bay levels. The water surface was 4·2 below coping of the south abutment of steel road bridge on May 18, 1908. What was known as point No. 2, 1908, was used in the meter for this gauging.

May 18, 1908: Gauge, 3·7; discharge, 6994 c.f.s.

Meter No. 1 was used to make the gauging.

Petawawa Discharge Curve.—The several meterings taken on the Petawawa have been plotted and a new discharge curve drawn from which a new daily discharge curve has been made for 1905 and 1908 whenever gauge readings were taken.

Bonnechère River.—A gauging was made of this river from the Canadian Pacific Railway bridge, just west of the town of Renfrew, on May 19, 1908. Gauge at concrete dam of the Electric company's power house read 9·45. It seems as though the elevation of this gauge has been changed since the previous gaugings were taken, but as far as I can learn, the gauge was never referred to a Bench Mark.

Point No. 3, 1908, was used for this metering.

May 19, 1908, W.S. 26·9 below base of rail of Canadian Pacific Railway bridge, was 25·9 below earlier in spring.

May 19, 1908: Gauge, 9·45; discharge, 3,901 c.f.s.

Meter No. 1 was used in making this gauging.

Bonnechère Discharge Curve.—As the gauge reading of May 19, 1908, does not seem to agree with readings of previous years, the gauging taken on that date has not been used for the discharge curve. Regular gauge readings were not kept on the Bonnechère this year but in 1905 there were, so a daily discharge curve was plotted for 1905. The gauge might be referred to a B.M. by a line of levels.

Madawaska River.—A gauging of this river was made from the Wallace or Clay Bank bridge about 3 miles south of the town of Arnprior on May 19, 1908, when the W.S. was 36·2 feet below the top of the iron hand rail on the upstream side of the bridge. The gauge on the upstream side of the dam at McLachlin's mill on the Madawaska read 6·0 feet, dam being full open. Another gauging was made from bridge on July 15, 1908, when the W.S. was 41·5 feet below the hand rail, and the gauge at the dam read 2·95 feet with the dam closed, except the log slide. The gauge that has been used in previous years is affected by the opening and closing of the dam, hence the hand rail on the Wallace bridge was used as datum for plotting the discharge curves. Point No. 3, 1908, was used on May 19, 1908, metering and point No. 4 on July 15, 1908.

May 19, 1908: W.S. 36·2 feet below hand rail; discharge, 18,222 c.f.s.

July 15, 1908: W. S. 41·5 feet below hand rail; discharge 2,730 c.f.s.

September 8, 1908: W.S. 43·8 feet below hand rail; discharge (estimated), 500 c.f.s.

Meter No. 1 used for both meterings.

NOTES RE MADAWASKA RIVER IN 1908.

April 23, 1908, placards for bridge at dam giving warning that bridge is unsafe.

May 8 to 15, 1908: Water high but dam stood test; gauge above dam on May 2 to 6, 8·9; May 9, 8·1; May 13, 7·3; May 19, 6·0; May 30, 5·0; started to put in stoplogs August 28, 1·0 on gauge, dam closed. See Parson's letter 28th; September 8, gauge above dam 2·0 feet below zero W. S. 43·8 feet below hand rail at Wallace bridge. Water said to be as low now as had been for twenty years.

9-10 EDWARD VII., A. 1910

Madawaska Discharge Curves.—As more meterings are required on this river, only an approximate discharge curve has been made. A gauge should be placed at the Wallace bridge, and daily records kept so as to get at the daily discharge curve.

September 8, 1909, a sixteen foot gauge was placed on downstream side of boom pier, a quarter of a mile below the Wallace bridge. At the same time, efforts were made to get a metering from the bridge, but the current was not strong enough to operate the meter so several floats were tried which together with observations at different points in river lead to the conclusion that the low water flow is about 500 c.f.s. instead of 900 c.f.s. as thought previously.

Mississippi River.—A gauging of this river was made on May 20, 1908, from the two road bridges near Galetta. The gauge which had been previously used had been carried away. New B.Ms. were established for both branches of the river. The B.M. for the branch farther from Galetta is a nail driven in top of plank on upper face of first pier from island. W.S., on May 20, 1908, was 3.9 feet below nail; was earlier in year 2.6 feet below. The B.M. for branch near Galetta is a nail driven in plank of retaining wall on island side of bridge and upstream from bridge. W.S., May 20, 1908, was 1.95 feet below nail and was earlier in year 0.75 feet. May 20, 1908, W. S. 16.8 feet below base of rail on Grand Trunk Railway bridge; was 15.1 feet below. Dam at falls full open. Point No. 3, 1908, used in this gauging.

May 20, 1908: Gauge discharge, 2,862 c.f.s.; W.S., 16.8 feet below base of rail, Grand Trunk Railway bridge. Meter No. 1 used for this gauging.

Mississippi Discharge Curve.—As noted above, the gauge was removed from this river last spring and the relation of this year's gauging to the previous gaugings is not known, so the discharge curve was drawn without reference to the gauging taken on May 20, 1908. A daily discharge curve has been drawn for 1905.

No daily gauge readings were kept on this river during 1908.

Rideau River.—A gauging of this river was made on May 13, 1908 from the Grand Trunk Railway bridge south of Ottawa. On that date, the W.S. was 9.55 feet below coping of the south abutment of the Grand Trunk Railway bridge. When the new road bridge, just east of the Grand Trunk Railway bridge was built, the gauge on the Rideau was torn out, and as it was never referred to a B.M. this year's level has not been tied in to the old levels.

May 13, 1908, W.S. 9.55 feet below abutment coping. Discharge, 9,409 c.f.s.

Meter No. 1, point No. 1, 1908, was used for this gauging.

Rideau Discharge Curve.—No daily gauge readings were kept on this river in 1908. As the gauge was torn away previous to our gauging May 13, 1908, no relation has been found between our gauging and previous gaugings, so the discharge curve has been plotted without our gauging in 1908. A daily discharge curve has been plotted for 1905.

Gatineau River.—Three gaugings were made of this river in 1908, May 7, 12 and 15.

May 7, 1908—Gauge, 213.16. Discharge, 47,920 c.f.s.

May 12, 1908—Gauge, 214.46. Discharge, 58,459 c.f.s.

May 15, 1908—Gauge, 214.67. Discharge, 63,542 c.f.s.

Meter No. 1, point No. 1, 1908, used in these gaugings.

Gatineau Discharge Curves.—A discharge curve has been plotted for this river and a daily discharge curve for 1900 to 1906 and part of 1908. The gauge readings on his Chelsea gauge for 1907 and 1908 have been secured from Mr. Keefer, C.E., and as soon as the elevation of his zero of gauge can be secured the daily discharge for 1907 and 1908 can be plotted.

SESSIONAL PAPER No. 19

Lièvre River.—One gauging was taken on this river on May 21, 1908, about five miles north of Buckingham near Newton's place. A nail driven in corner post of fence in front of Newton's house was used as B.M. The nail is 4.4 feet above ground surface. On May 21, 1908, W.S. was 7.4 feet below B.M.; had been 5.7 feet below nail. The gauge between the two upper falls at Buckingham was torn out during the flood this spring, but the W.S. on May 21, 1908, was 3 feet below the top of timber of the pier just below the upper falls and just near the end of the shorter log slide. Floats were used in making this gauging.

May 21, 1908, gauge. Discharge, 27,588 c.f.s.

Lièvre River Discharge Curves.—The discharge curve cannot be completed until the gauge height of May 21, 1908, is secured, but a daily discharge curve of the river for 1906 has been plotted using the gaugings taken in previous years. No gauge readings have been taken on this river this year.

Blanche River at Thurso.—One gauging was made of the river on May 27, 1908, from the Canadian Pacific bridge three miles east of Thurso, P.Q. On May 27, 1908, W.S. 28.7 feet below base of rail on Canadian Pacific Railway bridge. The elevation of the water surface at this gauging section is affected by the back water from the Ottawa.

Gauge at Black's Mill read 1.2 on May 27, 1908. All dams on the upper Blanche closed. Gauge at Black's Mill read 4.7 about May 1, 1908. Spring flood last about three weeks. Drive not down on May 27, 1908.

May 27, 1908, gauge, 1.2. Discharge, 449 c.f.s.

Meter No. 1 and point No. 3 were used on this gauging.

Blanche Discharge Curves.—No discharge curve has been plotted of this river as the gauge used was affected by dams, one above and one below the gauge.

North Nation River.—A gauging of this river was made on May 28, 1908, from the road bridge just west of Plaisance, P.Q. The river gauge was located at North Nation Mills, but was torn out in spring of 1908, but the gauge on May 28, 1908, would read 6.2. On May 13, 1908 gauge read about 9.4. In both cases dam full open. Gauge was replaced as near as possible to old elevation on May 28, 1908.

Drive not down by May 28, 1908.

May 28, 1908, Gauge, 6.2. Discharge, 3,649 c.f.s.

Meter No. 1 and point No. 3, 1908, used for this gauging.

North Nation Discharge Curves.—A discharge curve has been plotted and daily discharge curve for 1905. No gauge records were kept on this river this year.

Rouge River.—A metering was made of this river on May 29, 1908, at Johnson's ferry, the ferry cable being used as a base and the ferry as a boat. The gauge at Ross' powerhouse read 6.5 on May 29, 1908. About May 1, 1908, gauge read 9.5. On May 29, 1908, about 4 feet of water was over crest of dam and the power people said they had 27 feet of head. In powerhouse they had two 30-inch wheels on $\frac{3}{4}$ gate and one 35-inch wheel on $\frac{1}{4}$ gate. The 30-inch wheels were made by Jencks Machine'Co., of Sherbrooke, and the 35-inch, a Kennedy, made in Owen Sound.

May 28, 1905—Gauge 6.5. Discharge 12163 c.f.s.—6.8 c.f.s. per sq. mile.

Meter No. 1 and point No. 3, 1908, used in this gauging.

Rouge Discharge Curves.—The gauging of this river taken this year does not agree very closely with the previous gaugings, so the curve was drawn omitting this year's gaugings, and from this has been plotted a daily discharge curve for 1906. No gauge records were kept this year.

If a plan and profile of the dam could be got and also relation between zero of gauge and crest of dam, the measurement of May 29, 1908, could be checked.

9-10 EDWARD VII., A. 1910

Ottawa River at Besserer's Grove.—Three gaugings were made of the Ottawa river at Besserer's Grove in 1908: May 6, 11 and 14. The gauge used for these measurements is at the foot of Rideau locks, Ottawa. In making these gaugings, a base line was laid out on the south side of the river, and also a range. A launch was used to take the meter readings, the position of the launch on the range being located by a sextant angle to the two ends of the base.

Meter No. 1 and point No. 1, 1908, were used in all three gaugings: May 6, 1908, gauge 144-09, discharge 145246 c.f.s.; May 11, 1908, gauge 144-13, discharge 185719 c.f.s.; May 14, 1908, gauge 147-13, discharge 198660 c.f.s.

Discharge Curves.—A discharge curve has been plotted and also a daily discharge up till June, 1908.

Ottawa River at Chute à Blondeau.—A gauging of the Ottawa river was made at Chute à Blondeau on June 13, 1908. The same methods were used as at Besserer's Grove. On that date, W.S. at gauging section was elevation 93-02; was earlier in spring 97-82.

Meter No. 1, point No. 3, 1908, was used in this gauging.

June 13, 1908—

Upper Grenville gauge, 136-85.

Upper Carillon gauge, 92-49.

Discharge, 168009 c.f.s.

The upper Carillon gauge seems the better gauge to use in plotting this discharge curve for this gauging section.

About June 11 or 12 the steamer *Ottawan* had to be towed up the Chute à Blondeau because of the current. On June 13, current about six miles per hour.

Discharge Curve.—No discharge curves have been drawn.

Ottawa River at Ste. Anne de Bellevue.—A gauging was made here on June 15, 1908. The same method was employed as at Besserers' Grove and at Chute à Blondeau.

Meter No. 1, point No. 3 used in this gauging.

June 13, 1908—

Upper Grenville gauge, 136-35.

Upper Carillon gauge, 91-49.

Upper Ste. Anne gauge, 75-9.

Discharge, 42917 c.f.s.

Discharge Curves.—Discharge curves have been tried, using Upper Ste. Anne gauge, but do not seem to be very valuable.

Ottawa River at Vaudreuil.—A gauging of the Ottawa river was made here on June 17, 1908, from the Canadian Pacific Railway bridge. Meter No. 1, point No. 3, used at this gauging.

June 17, 1908—

Upper Grenville gauge, 135-85.

Upper Carillon gauge, 91-00.

Upper Ste. Anne gauge, 75-65.

Discharge, 39280 c.f.s.

Discharge Curves.—Ditto as per Ste. Anne.

Ottawa River at Ste. Geneviève.—A gauging was made here on June 23, 1908, the base line and launch method being used as at Besserer's Grove. Meter No. 1, point No. 3, 1908, being used in the gauging.

SESSIONAL PAPER No. 19

June 23, 1908—

Upper Grenville gauge, 134.93.

Upper Carillon gauge, 89.82.

Upper Ste. Anne gauge, 74.82.

Discharge, 32579 c.f.s.

Discharge Curves.—Ditto as per Ste. Anne.

Dutchman Channel.—A gauging was made here on June 20, 1908, the launch and base line method being used as at Besserer's Grove. Meter No. 1, point No. 3, 1908, being used in the gauging.

June 20, 1908—

Upper Grenville gauge, 135.52.

Upper Carillon gauge, 90.49.

Upper Ste. Anne gauge, 75.23.

Discharge, 32392 c.f.s.

Discharge Curves.—Ditto as per Ste. Anne.

Mille Isles River.—A gauging of this river was made on June 18, 1908, from the Canadian Pacific Railway bridge at Ste. Rose, W.S. was 13.3 feet below base of rail on bridge, June 18, 1908; had been 3 feet higher. Meter No. 1 and point No. 3, used in making this gauging.

June 18, 1908—

Upper Grenville gauge, 135.68.

Upper Carillon gauge, 90.82.

Upper Ste. Anne gauge, 75.48.

Discharge, 17011 c.f.s.

MEMO. RE SLOPES.

Ste. Anne de Bellevue.—June 16, 1908. A line of levels of the water surface was run from the head of the upper pier to the foot of the lower pier at Ste. Anne de Bellevue.

Rapids at Head of Mille Isles River.—June 20, 1908. A line of levels of the water surface was run from head of pier at the grist mill to the foot of the slope in the rapids at the head of Mille Isles river. The speed of the current was taken at this point and found to be 16 feet per second.

Dutchman Channel.—June 22, 1908. A line of levels of the water surface was run from the head of these rapids to the head of Ile Boiret, and the speed of the current taken and found to be 3.5 feet per second.

Vaudreuil.—June 17, 1908. A line of levels of the water surface was run from the head to the foot of the rapids.

Grenville.—June 9 and 10, 1908. A line of levels of the water surface was run down the rapids, from the head of the Grenville Canal to about one-quarter mile below the Great Northern bridge. The speed of the current was 16 feet per second.

MEMO RE GAUGINGS OF THE OTTAWA RIVER AND TRIBUTARIES IN THE SPRING 1908, BY
ARTHUR SURVEYER.

The velocity was measured with floats.

The subsurface float consisted of two vertical sheets of galvanized iron, 15 inches by 9 inches set at right angles and intersecting in their centre lines, with cylindrical air cavities $1\frac{1}{2}$ inches in diameter along the upper edges of the vanes.

9-10 EDWARD VII., A. 1910

This subsurface float was held at 0.6 of the depth by a fine cord attached to a surface float.

The rod float used was a galvanized iron tube $1\frac{1}{2}$ inches in diameter and loaded with shot. The mean velocity in the case of the rod float was obtained by using Francis' formula.

$$V'=V [1.0-0.116) \sqrt{D-0.1}].$$

in which V' =mean velocity

V =observed velocity

D =depth—immersion of rod depth.
depth.

It will be noticed that the rod floats measurements are slightly larger but on the whole the discharges calculated by the two methods seem to correspond very well.

Ottawa River at La Passe.—All gaugings here are referred to the Georgian Bay Ship Canal levels, read on the La Passe gauge.

Date.	Gauge.	Discharge in c.f.s	Remarks.
May 15, 1908.....	353.85	124,838	Rod float method. Calm.
" 16, "	354.0	124,703	Subsurface float method.
" 18, "	354.05	131,267	Up stream wind.
" 19, "	353.95	128,754	Rod float method. Calm.
" 23, "	353.8	126,824	Subsurface float method.
			Windy.
			Subsurface float. Calm.

Gauge readings were taken at La Passe from May 13 to June 11, 1908.

Date.	Water
May 13, 1908..	353.1
" 17, 1908..	354.1
" 29, 1908..	353.3
June 6, 1908..	354.1
" 11, 1908..	353.1

It will be noticed that at 20 days interval the water rose to the same elevation. The Coulouge river also had a second rise during the first north water days of June but did not come within a foot of its highest level on May 18.

On May 22, 1908, the water level at Spotswood was 355.3, at the mouth of the Coulouge river 354.5, and at La Passe 353.8, giving a difference of elevation of 1.5 between Spotswood and La Passe.

v.

THE CALUMET AND ROCHER FENDU CHANNELS.

The measurements were all taken on the Calumet channel a quarter of a mile below the Grand Marais ferry. The elevations all refer to the La Passe gauge and Mr. Johnson's curve refers to the Bryson gauge, but by comparing gauge readings taken on the same date and at different stages of the river, we can arrive at a fairly close estimate of the water level at Bryson on the required day.

SESSIONAL PAPER No. 19

Gauge at La Passe.	Gauge at Bryson.	Difference.
344.2	342.39	1.81
349.76	346.04	3.72
352.01	374.44	4.57
May 16, '08. 354.0	X = 348.6	5.4 Calculated.

CALUMET CHANNEL.

Date.	Gauge.	Discharge in c.f.s.	Remarks.
May 16, 1908.....	354.0	47,453	Rod float method.
" 18, "	354.05	45,528	Subsurface float method.
" 19, "	353.95	46,266	" "
	354.0	46,415	Mean of 3 gaugings.

ROCHER FENDU CHANNEL.

These figures are calculated from the observations taken at La Passe and at Calumet channel. The elevations refer to the La Passe gauge.

Date.	Gauge.	Discharge in c.f.s.
May 16, 1908.....	354.0	77,250
" 18, "	354.05	85,739
" 19, "	353.95	82,488
	354.0	81,823 Mean of three.

Black River.—Measurements were taken about two miles above Black Falls and are referred to the G.B.C.S. gauge at the Black Falls bridge.

Date.	Gauge.	Discharge in c.f.s.	Remarks.
May 21, 1908.	5.7	7,411	Surface float method.
22, 1908.	5.5	6,710	Subsurface float method.

The highest reading for the spring 1908, was 6.5 taken by Rochon at the powerhouse; he, however, had not sent in his notes September 25, 1908.

Coulouge River.—The measurements were taken just above Coulouge village and the elevations are referred to Georgian bay levels. The High Falls gauge is situated above the falls, six miles up stream, and for some reason does not fluctuate with the gauge at Coulouge village.

9-10 EDWARD VII., A. 1910

Date.	Gauge.	High Falls.	Discharge in c.f.s.	Remarks.
May 20, 1908.....	356.8	8.7	14,868	Subsurface float method.
" 26, "	355.85	8.5	11,636	" " "
" 26, "	355.85	8.5	11,633	" " "

Gauge readings at Coulonge Village above C. P. R. track by party.

Date.	Water Elevation.
May 18, 1908.....	357.8
" 29, "	355.6
June 3, "	355.5
" 8, "	355.6

SLOPE FROM LA PASSE TO COULONGE VILLAGES.

Water elevation on May 20, 1908—

At La Passe.....	353.90
At the mouth of the Coulonge river.....	354.6
At C.P.R. bridge on Coulonge river.....	355.1
At Coulonge village above C.P.R. tracks.....	356.8

Mr. A. J. Matheson visited Mattawa May 9, and collected data *re* condition of Timiskaming lake and Mattawa river, then followed down river to Pembroke examining the DuMoine, Petawawa, Indian, Muskrat, the Bonnechere, Madawaska and Mississippi were also inspected at high stage. This was followed by meterings at Petawawa, Renfrew and Arnprior and Galetta, May 17 and 19, the period of highest water.

During the last week in May, the Gatineau and Lièvre were examined and notes gathered with reference to high water conditions.

During July an investigation was made along the Rivière des Prairies for the flow at Ile Visitation and the material to be dredged at Bout de l'Ile.

The mill site opposite Des Prairies village was also examined. At Ste. Anne and Cap a l'Orme the river slope and rate of current were determined.

In August, various lakes throughout the lower half of the Gatineau were examined for storage, but the upper half of this watershed is difficult of access. In fact, a regular survey party must some time be organized.

GRAND LAKE VICTORIA.

From the studies made it appeared that only sufficient storage for a flood like that of 1876 was available and then every individual reservoir would be taxed to its limit. To obviate this high pressure condition it was resolved to despatch a party to Grand Lake Victoria, to determine the possibility of discharging flood water north onto the Hudson Bay slope. This would disencumber the lower reservoirs of 12,000 square miles of drainage during the peak of a great flood.

SESSIONAL PAPER No. 19

Accordingly, a reconnaissance party left during the first week of February and after seven days travel on foot reached the height of land. It was found quite feasible to divert the flow as contemplated.

A topographical survey of the lake shores showed that a storage of twenty feet could easily be held.

The party returned about the middle of March, exploring the Winewaska river to Expanse lake. Heavy snowstorms however delayed their progress and provisions ran short, so that a reconnaissance of Lakes Expanse and Quinze was impracticable.

I have the honour to be, sir,

Your obedient servant,

C. R. COUTLEE.

PART V.

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED MARCH 31, 1909

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF THE GENERAL SUPERINTENDENT,
OTTAWA, ONT., June 18, 1909.

NAPOLEON TESSIER, Esq.,

Secretary, Department of Public Works,

SIR,—I beg to submit herewith my report on the Government Telegraph Service for the fiscal year ended March 31, 1909.

This report, as usual, is prefaced by a list to the present date of the land lines and cables in operation; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic handled in each instance.

The usual tabular statements giving list of offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, showing the rates charged for messages on the several lines.

I have the honour to be, sir,

Your obedient servant.

D. H. KEELEY,
General Superintendent.

9-10 EDWARD VII., A. 1910

THE GOVERNMENT TELEGRAPH SERVICE

DOMINION OF CANADA.

HEAD OFFICE: DEPARTMENT OF PUBLIC WORKS, OTTAWA.

(June 1, 1909.)

EXECUTIVE.

The Hon. William Pugsley, Minister of Public Works.
J. B. Hunter, Esq., Deputy Minister of Public Works.

STAFF AT HEADQUARTERS.

D. H. Keeley, General Superintendent.
M. W. Crean, Technical Assistant to Superintendent.
J. E. Gobeil, Technical Assistant to Superintendent.
Miss A. Hardeastle, Secretary to General Superintendent.
J. P. Demartigny, Accountant, Telegraph Branch.
J. E. Bray, Assistant Accountant, Telegraph Branch.

GENERAL INSPECTORS.

A. B. McDonald, North Sydney, Cape Breton, lines in Nova Scotia and New Brunswick.
J. S. Macdonald, Edmonton, Alta., lines in Northwest and south British Columbia.

SUPERINTENDENCIES.

Edwin Pope, Quebec, dist. supt., North Shore and G.N.W. traffic.
J. C. Taché, dist. supt., Chicoutimi district and North Shore to Bersimis.
E. H. Tetu, Long Point of Mingan, dist. supt., North Shore, East Bersimis.
P. Pouliot, dist. supt., Quarantine line, &c., to Grosse Isle.
A. Malouin, dist. supt., West Point, Anticosti Island.
A. Le Bourdais, Grindstone, dist. supt., Magdalen Islands.
D. C. Dawson, St. John, N.B., dist. supt., Cape Breton system.
Mrs. C. C. Seely, Grand Manan, N.B., dist. supt., Bay of Fundy system.
J. McR. Selkirk, Leamington, Ont., dist. supt., Pelee Island system.
Robt. C. Macdonald, Edmonton, Alta., dist. supt., Northwest Territories.
Wm. Henderson, Victoria, dist. supt., British Columbia, south.
C. S. Stevens, Summerland, B.C., supt., Penticton line.
J. T. Phelan, Vancouver, B.C., supt., Yukon system.
H. Gilchen, Whitehorse, Y.T., dist. supt., Atlin-Boundary.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.
			Land Lines.	Cables.	Total.		
			Miles	Kt's.			
Newfoundland..	Port au Basque—Cape Ray.....	1883	14	.....	14	2	
Nova Scotia ...	North Sydney—Meat Cove (with loops)...	1880-02	165½	.....			
"	 Across Bras d'Or channel.....	1880		.....			
"	 " St. Ann's Harbour.....	1887		.....	167	18	
"	 " Ingonish Harbour.....	1887		.....			
"	 French River.....			.....			
"	 Englishtown.....			.....			
"	 Big Bras d'Or—Kempt Head.....	1904	20	.....	20	3	
"	 Meat Cove—St. Pauls Island.....	1890		20	23	1	
"	 On St. Pauls Island.....	1890	3	.....	109	9	
"	 Mabou—Meat Cove.....	1887-00	109	.....			
"	 Barrington—Cape Sable.....	1883	16	.....	17½	Leased.	
"	 Across Bear Point Channel.....	1883		1½			
"	 " Lt. House Channel.....	1883		¼			
"	 Mabou—Port Hawkesbury.....	1903	41½	.....	73½		
"	 Port Hawkesbury—St. Peters.....	1903	32	.....			
"	 St. Peters—Main-à-Dieu.....	1901	84½	.....		16	15,017
"	 Main-à-Dieu—Scatarie.....	1902	1	1½	129½		
"	 On Scatarie Island.....	1904	7½	.....			
"	 Gabarous—North Sydney.....	1904	35½	.....			
"	 Little Bras d'Or—Kempt Head.....	1905	36	.....	36	13	
"	 North Sydney—Eskasoni.....	1905	37	.....	37		
"	 Castle Bay—Grand Narrows.....	1908	16	.....	16	3	
"	 North Sydney—Little Bras d'Or (second wire).....	1906	6	.....	6		
"	 Grand River—Enon.....	1907	19½	.....	19½	2	
	<i>Port Hood, Island Branch:</i>						
	(Length of construction in loop.)						
"	 On mainland at Port Hood.....	1907	½	.....			
"	 Port Hood—Smiths Island.....	1907		2			
"	 On Smiths or Inner Island.....	1907	4	.....	13½	4	
"	 Smiths Island to Henry Island.....	1907		3			
"	 On Henry or Outer Island.....	1907	4	.....			
New Brunswick.	Chatham—Escominac.....	1885	42½	.....	42½	6	785
	<i>Bay of Fundy System:</i>						
"	 Eastport—Campobello.....	1880		1½			
"	 On mainland Eastport.....	1880	½	.....			
"	 On Campobello Island.....	1880	7½	.....			
"	 Campobello—Grand Manan.....	1880		7½	44½	11	2,201
"	 On Grand Manan Island.....	1880	25½	.....			
"	 Grand Manan—Cheneys Island.....	1890		½			
"	 On Cheneys Island.....	1890		¾			
"	 Cheneys Island—White-head Island.....	1890		¾			
"	 Partridge Island—Fort Dufferin.....	1900		¾			
	<i>Magdalen Island System:</i>						
Quebec.....	Meat Cove, C B. Magdalen Islands.....	1880		55			
"	 On Magdalen Island.....	1881-02	83½	½			
"	 Grosse Isle—Bryon Island.....	1902		11	158	13	2,852
"	 Bryon Island—Anticosti.....	1902		•			
"	 On Bryon Island (Loop).....	1903	1	.....			
"	 House Harbour—Pointe Basse (Loop).....	1902	4	.....			
"	 Pointe Basse—South Beach (Loop).....	1905	3	.....			
	<i>Anticosti System:</i>						
"	 Gaspé—L'Anse à Fougère—.....	1881	28	.....			
"	 L'Anse à Fougère—Anticosti.....	1881		44½	316½	9	954
"	 On Anticosti Island.....	1881-90	223½	.....			
"	 Anticosti—Long Point, Mingan.....	1890		21			
Carried forward.			1,071½	172½	1,244	110	21,809

*This cable section, 93 knots, was withdrawn in 1906.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE.—*Con.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.	
			Land Lines.	Cables.	Total.			
			Miles.	Kt's.				
	Brought forward.....		1,071 $\frac{1}{2}$	172 $\frac{3}{4}$	1,244	110	21,809	
Quebec	Bay St. Paul—Chicoutimi.....	1881-04	98	...	98	6	21,686	
"	St. Alexis—St. Catherine's Bay.....	1904	78	...	78	5		
"	Murray Bay—St. Agnes.....	1904	14 $\frac{1}{2}$	...	14 $\frac{1}{2}$	2		
"	Bay St. Paul—Petite River.....	1904	13	...	13	1		
"	Chicoutimi—St. Charles.....	1903	37	...	61	10		
"	St. Anne—Lac Claire.....	1903	15	...				
"	St. Anne—St. Fulgence.....	1903	9	...				
"	St. Fulgence—Sacré Cœur.....	1905	57 $\frac{1}{2}$	...	57 $\frac{1}{2}$	4		
"	Murray Bay—St. Catherine's Bay(2nd wire)	1904	44 $\frac{1}{2}$	...	44 $\frac{1}{2}$	...		
"	St. Alexis—Chicoutimi (2nd wire).....	1905	14 $\frac{1}{2}$	...	14 $\frac{1}{2}$	...		
"	St. Charles—St. Henri de Taillon.....	1907	24 $\frac{1}{2}$	...	24 $\frac{1}{2}$	4		
	<i>North Shore Line:</i>							
"	Murray Bay—Chateau Bay.....	1881-01	1,028 $\frac{1}{2}$	...	1052	68	1,769	
"	Across Saguenay River.....	1883	...	1 $\frac{1}{2}$				
"	Chateau Bay—Belle Isle.....	1901	...	22 $\frac{1}{4}$				
"	Bersimis—Godbout.....	1904-05	104	...	104	68		
	<i>Quarantine System:</i>							
"	Quebec—L'Ange Gardien.....	1885	13	...	52 $\frac{3}{4}$	8	1,769	
"	L'Ange Gardien—Orleans Island.....	1885	...	4 $\frac{1}{2}$				
"	On Orleans Island.....	1885	29 $\frac{1}{4}$	...				
"	Orleans Island—Isle Réaux.....	1889	...	2	5	1		
"	On Isle Réaux.....	1889	2 $\frac{1}{2}$	...				
"	Isle Réaux—Grosse-Isle.....	1889	...	2				
"	On Grosse Isle (all told).....	1885-94	3 $\frac{1}{2}$	...	5 $\frac{1}{2}$	1		
"	St. Jean—St. Famille (loop).....	1904	5 $\frac{1}{2}$	...				
"	St. Francois—St. Francois Nord (looped wire).....	.....	5	...	5	3 $\frac{1}{2}$		
"	St. Francois—Baie St. Paul.....	1906	...	30	30			
"	Crane Island to Montmagny.....	1905	...	3 $\frac{1}{2}$	3 $\frac{1}{2}$			
"	Crane Island to Grosse-Isle.....	1907	...	5	5			
	<i>Pelee Island System:</i>							
Ontario.	Leamington—Point-Pelee.....	1889	12	...	42 $\frac{3}{4}$	10	1,501	
"	Leamington Dock—Pelee Island.....	1901	...	17 $\frac{1}{4}$				
"	On Pelee Island.....	1889-00	13 $\frac{1}{2}$	...				
Northwest..	Qu'Appelle—Edmonton.....	1883	625	...	625	16	18,254	
"	Moosejaw—Wood Mountain.....	1885	90 $\frac{1}{2}$	...	90 $\frac{1}{2}$	2		
"	Wood Mountain—Willow Bunch.....	1904	38	...	38	5		
"	Edmonton—Indian Ag. & Stoney Plain.....	1904	24	...	24			
"	Edmonton—Athabaska Ldg.....	1904	98	...	98			
"	Duck Lake—Batoche.....	1902	9	...	12 $\frac{1}{2}$	3		
"	Duck Lake—Indian Agency.....	1902	3 $\frac{1}{2}$	...				
"	Edmonton—St. Albert.....	1887	9	...				
"	St. Albert—Qui Barre and Alexandria.....	1902	27	...	36	3		
"	Lloydminster (loop) near Pitt.....	1904	22	...	22	1		
"	Victoria—Andrew and Whitford.....	1904-05	11 $\frac{1}{2}$	...	11 $\frac{1}{2}$	2		
"	Qu'Appelle—Lipton (loop).....	1906	11	...	11	1		
"	Saddle Lake—Industrial School.....	1900	6 $\frac{1}{2}$	...	6 $\frac{1}{2}$	1		
"	Kamsco—Indian Agency.....	1907	6 $\frac{1}{2}$	...	6 $\frac{1}{2}$	1		
British Columbia	Victoria—Cape Beale.....	1891	118	...	118	6	1,896	
"	Nanaimo—Comox.....	1893	81	...	81	10	13,665	
"	Parksville—Alberni.....	1895	29 $\frac{1}{2}$	...	86 $\frac{1}{2}$	2		
"	Alberni—Cape Beale.....	1899	57	...				
	Carried forward.....		3,959 $\frac{1}{2}$	256 $\frac{3}{4}$	4,217 $\frac{1}{4}$	282	80,580	

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
	Brought forward.....		3,959 $\frac{1}{2}$	256 $\frac{3}{4}$	4,217 $\frac{1}{4}$	282	80,580
British Columbia	Alberni—Clayoquot.....	1902	96 $\frac{3}{4}$	.....	96 $\frac{3}{4}$	9	1,448
"	Kamloops—Lower Nicola.....	1899	67	.....	67		
"	Lower Nicola—Penticton.....	1905	168	.....	168	32	24,000
"	Vernon—Kilowna.....	1905	35	.....	35		
"	Kilowna—Penticton.....	1906	45	1 $\frac{1}{2}$	46 $\frac{1}{2}$	4	1,126
"	Golden—Windermere.....	1901-02	92	.....	92		
"	Duncan Sta.—Salt Spring Isl. & Extens.	1902-04	24	$\frac{3}{4}$	24 $\frac{3}{4}$	5	684
"	Vernon—Lumley.....	1907	18	.....	18	1	
Yukon.....	Ashcroft—Dawson and Boundary.....	1899-01	1845	}	2,252 $\frac{1}{2}$	68	41,811
"	Hazelton—Port Simpson and Aberdeen.....	1901-02	202 $\frac{1}{2}$				
"	Tagish—Cariboo Crossing.....	1901	18				
"	150 mile Sta.—Quesnelle Forks.....	1902	64				
"	Ashcroft—Lillooet.....	1896	62				
"	Quesnelle—Parkerville.....	1887	61	}	215		
"	Ashcroft—Quesnelle (local wire).....	1878-87	215				
	Total.....		6,973 $\frac{3}{4}$	259	7,232 $\frac{3}{4}$	401	149,649

*For convenience in totalling, the knots of cable are regarded as statute miles.

9-10 EDWARD VII., A. 1910

REPORT ON THE GOVERNMENT TELEGRAPH SERVICE, 1908-9.

EXPLANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of the telegraph lines operated by the government. Lines that have been subsidized or constructed and transferred by the government for operation by private companies are not included in this list.

The matter in the following pages comprises a statement of specific actions taken in the course of the year; and as a new departure the particulars are given in separate reports hereto subjoined, that have been obtained, where practicable, from the district superintendents, and will be found indicated under the several division headings. In any case where no particular reference is made to a line found in the above-mentioned list, the understanding intended to be conveyed is that the line has been satisfactorily operated throughout the year, without any change of conditions since last made mention of in the annual report.

NEWFOUNDLAND.

The line from Port au Basque to Cape Ray continued to be operated as heretofore, under an arrangement with the Anglo-American Telegraph Company.

MARITIME PROVINCES.

Cape Breton.—Under an appropriation for the purpose, there was in the autumn of 1908 an extension made of the Eskasoni branch line, a distance of 16 miles to Grand Narrows, and arrangements are in hand for the establishment of several offices in that locality.

The Grand River branch line to Enon, was last autumn extended a further 12 miles towards Victoria bridge and will in the course of the present season be completed to Gabarous in pursuance of the intention mentioned in the last annual report.

Some general overhauling and resetting of poles was done in the season of 1908 on the Port Hawkesbury-Grand River and North Sydney-Scatarie sections.

The Scatarie cable was interrupted from April 13, 1908, and put again in operation on June 27. This cable had been subjected to damage by ice in the spring of every year since it was laid and as the result of local observations a change of its location was decided upon, and on this occasion of repair the landing places were shifted further to the eastward on the mainland and likewise on the island. The length of the cable now connecting the island is 3.34 knots (including .25 knot of shore end type at each of the shores) in place of the 1.75 knots previously employed.

Under an agreement with the Eastern Telephone Company, providing for joint ownership, a single line of poles to carry our respective wires has been erected through the town of North Sydney and along to Little Bras d'Or. The old poles had fallen into decay and there was some local objection to a needless duplication in the renewal.

A record of new offices opened, &c., will be found in the appended report (No. 1) from the district superintendent, Mr. D. C. Dawson.

St. Pauls Island.—The St. Pauls cable was interrupted on January 7, 1908, and repaired and put in good working order again by the ss. *Tyrian* on June 13. It was found to have been crushed by ice near both shores, and was also broken in deep water about midway between the island and the mainland.

SESSIONAL PAPER No. 19

Bay of Fundy.—As a measure of assistance to a local telephone company recently established on Grand Manan, permission was given under the usual conditions for the use of the government telegraph poles for the suspension of their wires along the routes where a double line of poles would otherwise have been called for.

On August 27, 1908, the telegraph cable between Eastport and Campobello became inoperative and had to be attended to by the repair ship. The *Tyrian* was at the time available at Halifax and was at once sent round. The cable was repaired on the 9th of the following month. The rest of the system was kept in good order throughout the year. See report (No. 2) from the district superintendent, Mrs. C. C. Seely.

QUEBEC.

Magdalen Islands.—The appended report (No. 3) from the district superintendent, Mr. A. Le Bourdais, covers the local conditions and operation of the land line sections throughout the year.

Anticosti Island.—See report (No. 4) from the district superintendent, Mr. A. Malouin, hereto annexed.

North Shore St. Lawrence and Chicoutimi.—The working conditions as set forth in last year's report, have continued satisfactory and undisturbed. A further extension of the Chicoutimi-St. Charles branch and some general repairs to roadways and bridges, necessary to the upkeep of the telegraph line in several sections of the Chicoutimi district, will be found dealt with in the annexed report (No. 5) from the district superintendent, Mr. J. C. Taché.

Along the North Shore, east of Bersimis, to the Straits of Belle Isle, the line has been maintained in satisfactory order. Repair gangs under the foremanship of the regular lineman in the several sections, performed, as has been customary each year, whatever work in the way of general overhauling and clearance of the line and the renewal of bridges, shelter huts, &c., that was called for in the several sections.

Changes and appointments, where any have been made, will be found noted in the tabular statement of offices, agencies, &c., in the appendix.

Quarantine System.—Throughout the season of navigation of 1908, after repairs to the cables were made in May and June, as noted in last year's report, the quarantine system of land lines and cables continued in good working order. In the course of the past winter there was trouble again from the ice in the river; the cable between Crane island and Montmagny was broken in December, and on an attempt being made to repair that section, it was found that about two miles of its length had been cut off near the shore and carried down the river. There being no spare cable immediately available, the restoration of this connection has been indefinitely postponed. The alternative connection via Grosse Isle is, however, in good working order and ought to satisfactorily meet all requirements. Some damage was also sustained by the stretches between St. Francois and Ile aux Reaux, March 12, 1909, and between Ange Gardien and St. Pierre, March 22, 1909. These two cables were again put in order in May by the local superintendent, Mr. J. P. Pouliot, whose report (No. 6), hereto appended, will be found to contain an account of the operating conditions, &c., in his district in the course of the year.

ONTARIO.

Pele Island Telephone System.—The appended report (No. 7) from Mr. J. McR. Selkirk, district superintendent at Leamington, will be found to contain, barring the period of interruption, a satisfactory showing as to the maintenance and operation of the system during the year.

NORTHWEST, BRITISH COLUMBIA AND THE YUKON.

The separate reports (Nos. 8-12), appended hereto, from the respective district superintendents, will be found to convey an account of what has been done in these

9-10 EDWARD VII., A. 1910

divisions of the service in the course of the fiscal year. The whole, as was the case for the previous twelve months, affords a very satisfactory showing.

TELEGRAPH SERVICE GENERALLY.

Cable Ship 'Tyrian.'—As mentioned elsewhere, the ss. *Tyrian*, in the course of the season of 1908, made repairs on the Gaspé-Anticosti cable and on the stretch between Bay St. Lawrence and St. Pauls island, and renewed the connection with Seatarie. The appended report (No. 13), from Mr. A. B. McDonald, electrician, conveys a statement of the lengths of cable handled. To meet further requirements in the way of repairs, &c., it is had in view to pick up as early as convenient the now disused length between Chateau bay and Belle isle, 20 knots, which has been superseded by the wireless stations of the Department of Marine and Fisheries.

Telegraph Systems of the Dominion.—As a matter of general interest, pursuant to the statement submitted last year, the latest figures to hand showing the extent of telegraph lines in operation in the Dominion are given hereunder:—

Canada.	LENGTH OF LINES IN MILES.			LENGTH OF CONDUCTORS IN MILES.			Number of Offices.
	Aerial.	Under-ground.	Total.	Aerial.	Under-ground.	Total.	
Great North Western Telegraph Co.	11,775	.....	11,775	48,652	.....	48,652	1,350
Canadian Pacific Telegraph....	10,292	2	10,294	50,952	57	51,009	1,150
Western Union Telegraph Co....	2,610	28	2,638	9,805	44	9,849	219
Government Telegraph service..	6,974	.....	6,974	6,974	.....	6,974	401

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the government lines in the several districts hereinbefore mentioned, are given in the following table:—

1908-09.	Expenditure.	Revenue.	Remarks.
	\$ cts.	\$ cts.	
Lower St. Lawrence and Maritime Provinces :—			
Anticosti lines.....	5,514 78	1,182 19	
Bay of Fundy.....	2,299 77	899 41	
Gaspé Local... ..	.....	29 28	
Escuminac.....	682 96	194 96	
Magdalen Islands.....	4,631 89	1,215 69	
Father Point Agency.....	500 00	.....	
Cape Breton lines.....	15,244 07	3,324 92	
North Shore (E. B.).....	29,073 40	5,546 62	
" (W. B.).....	12,642 08	2,640 90	
Quarantine system.....	6,302 97	551 12	
Cable ship <i>Tyrian</i> :—			
Maintenance and repairs.....	46,623 21	.....	
Subsidies, stationery, line and office material and contingencies....	14,303 78	.....	
Gulf general.....	.....	.....	
Ontario :—			
Peleé Island line.....	118 75	247 45	
Northwest Territories lines.....	31,977 21	5,805 21	
British Columbia :—			
Alberni-Cape Beale.....	2,056 90	131 79	
Alberni-Clayoquot.....	4,494 61	441 46	
Golden-Windermere.....	3,932 51	969 36	
Kamloops-Nicola, Penticton.....	11,222 78	9,137 40	
Vernon-Kelowna.....	.....	.....	
Nanaimo-Comox.....	7,085 71	3,103 84	
Vancouver-Salt Spring.....	1,262 45	399 19	
Victoria-Cape Beale.....	10,697 55	549 42	
B. C. service generally.....	4,291 34	.....	
Yukon :—			
Ashcroft-Dawson.....	215,110 05	76,805 13	
Telegraph service generally.....	4,876 41	.....	
Total.....	434,845 18	113,175 34	Signal Service messages, Meteorological Service messages and reports, and Fisheries bulletins are handled free of tolls.

SESSIONAL PAPER No. 19

DEPARTMENTAL TELEPHONE SERVICE.

Up to date of this report (June 18, 1909), the telephone connections with the central offices of the Bell Telephone Company at Ottawa, listed as chargeable to the special appropriation, numbered 411, the annual charge for which amounts to \$16,846.25. The connections are distributed amongst the several departments, as hereunder:—

Department.	Offices.	Residences.	Annual charge.
			\$ cts.
Agriculture	11	5	630 00
Auditor general.. . . .	10	1	480 00
Census Department	1	1	85 00
Customs Department	8	3	445 00
Dominion Police	10	3	523 00
Exchequer Court	1	1	100 00
Finance Department	7	3	405 00
Governor General (including Priv. System)	7	3	462 75
Geological Survey	7	2	355 00
House of Commons	15	3	782 50
Indian Affairs	6	2	320 00
Inland Revenue	6	3	376 00
Interior Department	46	6	2,105 00
Justice Department	8	10	693 00
Labour Department	1	3	155 00
Mounted Police	3	1	145 00
Marine Department	18	7	993 00
Militia and Defence	27	14	1,735 00
Parliamentary Library	1	2	120 00
Post Office Department	10	6	630 00
Privy Council	6	6	485 00
Public Works Department	40	15	2,361 00
Railways and Canals	10	10	775 00
Royal Mint	1		40 00
Secretary of State	7	5	463 00
Stationery and Printing	9	5	595 00
Trade and Commerce	5	3	325 00
The Senate	6	1	268 00
	287	124	16,846 25

APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., of the telegraph service, following hereupon, will be found to contain whatever additions or changes have been made up to March 31, 1909.

D. H. KEELEY,

OTTAWA, June 18, 1909.

General Superintendent.

DOMINION TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SERVICE.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Memo
		Miles.	\$ c.	
1	Port au Basques	0	50 00 or commission.	N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Cap Ray Lighthouse	14	50 00 "	
	Totals	14	100 00	

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE.
NOVA SCOTIA TELEGRAPH SYSTEM.

CAPE SABLE SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		% cts.		
1	Barrington.....	0				This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.
2	Newelton (including 1½ knots cable).....	11				
3	Cape Sable Island light-house (including ¼ mile cable).....	6½				
	Totals.....	17½				

EAST COAST SECTION.

N.B.—In connection with the Signal Service a land line, 208 miles in length, was erected in 1881, between Canso and Halifax, for a bonus of \$16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.

CAPE BRETON SECTION.

MEAT COVE TO SCATAIRIE ISLAND (EASTERN LIGHT) WITH BRANCHES.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.		Date of Appointment.	Memo.
				\$	cts.		
1	Meat Cove ^a	0	See Meat Cove, North Sydney Section.				
2	Cape St. Lawrence	4	Mrs. C. Jamieson.....	50 00	per annum.....	Jan. 1, 1904	
3	Pleasant Bay.....	15	Mrs. G. P. McIntosh.....	50 00	"	Sept. 1, 1907	
4	Cheticamp.....	27	Chas. J. Au Coin.....	50 00	"	Aug. 3, 1905	
5	Grand Etang.....	8	G. Doucet.....	50 00	"	Sept. 13, 1902	
6	North-east Margaree (loop line wire).....	8	Mrs. J. D. Ross.	50 00	or commission.	Feb. 1, 1898	
7	Margaree Harbour.....	10	A. B. C. McLean.....	50 p.c. R. & Cks.	Oct. 20, 1896		
8	Margaree Forks.....	3	Sarah McDougall.....	50 00	per annum.....	Sept. 10, 1908	
9	Southwest Margaree.	2	D. D. McFarlane.....	50 00	"	Feb. 1, 1898	
10	Inverness Town (Broad Cove).....	12	Annie Smith.....	50 00	"	Aug. 1, 1908	
11	Strathmore.....	11	Catherine McLean.....	50 00	or commission.	Nov. 1, 1908	
12	Nabou.....	9	Mrs. M. McDonald.....	120 00	per annum.....	April 1, 1887	
13	Port Hood.....	10	D. J. McDonald.....	50 00*	"	July 1, 1903	
14	Port Hood Id. (Smiths) ^{**} Id.) cable.....	4½	Elsie M. Smith.....	50 00	"	Nov. 1, 1907	
15	Outer Island (Henry) Id.) cable.....	4	Cassie McLennan.....	50 00	"	Nov. 8, 1907	
16	Judique.....	10	E. McDonald.....	50 00	"	Nov. 1, 1903	
17	Craigish (Craigmore).....	8	Allan Cameron.....	50 00	"	Nov. 1, 1903	
18	Port Hastings.....	10	Miss M. McFarlane.....	50 00	"	" 1, 1903	
19	Port Hawkesbury.....	3½	Miss E. McDonald.....	120 00	"	" 1, 1903	
20	River Bourgeois.....	26	M. E. Boyd.....	50 00	"	" 1, 1903	
21	St. Peters.....	6	R. C. Morrison.....	100 00	"	" 22, 1905	
22	Lower Lardiose (½ mile loop)	7	Miss Mary M. Finlayson.....	50 00	"	June 1, 1903	
23	Grand River.....	8	Miss E. A. Finlayson.....	50 00	"	" 1, 1903	
24	Grand River Falls.....	19½	Mrs. E. D. McKillop.....	50 00	"	Dec. 20, 1907	
25	Loch Lomond.....	19½	Mrs. J. McK. Fraser.....	50 00	"	" 14, 1907	
26	Enon.....		Effie McDonald.....	50 00	"	May 13, 1908	
27	St. Esprit (Laframboise Intervale).....	13	Mrs. J. D. Morrison.....	50 00	"	Sept. 1, 1906	
28	Fouchu (Fouchie).....	13	Miss Ida F. Cann.....	50 00	"	March 25, 1907	
29	Gabarons (3 mile loop).....	16	Miss C. Grant.....	360 00	"	Jan. 16, 1904	Repeating office.
30	Louisbourg.....	14	Wesley Townsend.....	50 00	"	Feb. 1, 1904	

The commission is 25 p.c. of the Government line
tolls, and is guaranteed to amount to not less than
\$50 per annum. Where 50 p.c. commission is paid
there is no guarantee as to amount.

Main battery at St. Peters.

GOVERNMENT TELEGRAPH SERVICE—Continued.

CAPE BRETON SECTION—Continued.
MEAT COVE TO SCATARIE ISLAND (EASTERN LIGHT) WITH BRANCHES—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
31	Main à Dieu To cable landing Cable across channel..... ¹³ Scatarie Island (Western Light)..... ²	13½ 2	Hattie Dickson.....	50 00 per annum ...	Oct. 1, 1908	\$50 additional to Main à Dieu agency for care of main battery.
32	Scatarie Island (Eastern Light).....	7½	E. E. Pope..... J. T. Martel.....	50 00 " 50 00 "	Aug. 15, 1904 " 1, 1904	
34	St. Pauls Island	317½	S. C. Campbell.....	50 00 " 2,150 00	Oct. 1, 1899	Land wire across the Island, Atlantic Cove to Trinity Cove.

*Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Pauls Island by a cable of 20 knots. The latter is operated with telephones.
**Branch from Port Hood.

MEAT COVE TO NORTH SYDNEY AND GABAROUS WITH BRANCHES.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
				\$ cts.		
0	Meat Cove.....	0	Mrs. H. L. McEachern.....	50 00 or commission	Sept. 1, 1907.	
1	Bay St. Lawrence, includ- ing connections to cables.	14	{ V. Theriault Mde V. Theriault	720 00 420 00	May 1, 1902.	Cable station at Bay St. Lawrence in place of Meat Cove since September 1, 1906. The commission is 25 p. c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum.
2	Aspy Bay	5	L. Y. Nichols.	50 00 or commission	July 1, 1894.	
3	Dingwell (loop line).	33½ 2½	{ Joe O'Brien.....	50 00 " 50 00	Nov. 1, 1907.	
4	Cape North (Inland)	3	N. A. McDonald.....	50 00 " 50 00	May 13, 1904.	
5	Nails Harbour (half-way house loop line).....	10 1½	{ M. McLeod.....	50 00 " 50 00	April 1, 1887	
6	Ingonish, North Bay (4 knot cable).....	8½	Mrs. S. S. Burke.....	50 00 " 50 00	June 1, 1884	

SESSIONAL PAPER No. 19

7	South Ingonish.....	Geo. Brewer.....	50 00	"	May 7, 1899.
8	Ingonish Ferry.....	Anna McLeod.....	50 00	"	Oct. 1, 1903.
9	Wreck Cove.....	Miss Mary Morrison.....	50 00	"	May 18, 1908.
10	French Riv. (4 knot cable-)	John McDonald.....	50 00	"	April 1, 1899.
11	Breton Cove.....	D. B. McLeod.....	25 p. c.	"	July 19, 1907.
12	Indian Brook.....	Sadie McDonald.....	50 00	"	Feb. 1, 1907.
13	Murray (loop line).....	K. B. Matheson.....	50 00	"	Jan. 29, 1902.
14	Englishtown (4 knot cable) Cable across St. Ann's Isle (4 knot).....	W. Bingham.....	120 00 and commiss. and 25 p.c.R. & Cks.....	"	July 19, 1892.
15	South Gut, St. Ann's (on loop).....	Rachael Morrison.....	50 00 or commission	"	Sept. 1, 1901.
16	Baddeck (on loop).....	L. M. Anderson.....	100 00 and 25 p.c. R & Cks.....	"	June 17, 1904.
17	Englishtown (back on loop) Kelley's Cove, N. Campbell Island.....	J. S. Burehell.....	50 00 or commission	"	July 7, 1904.
18	Big Bras d'Or (4 knot cable)	D. Livingston.....	100 00	"	Jan. 1, 1889.
19	Bouliarderie Centre.....	Mrs. J. B. McKenzie.....	50 00	"	" 6, 1901.
20	Ross Ferry.....	Robert Campbell.....	50 00	"	" 6, 1904.
21	Upper Kempt Head.....	Mrs. Murdoch McKenzie.....	50 00	"	Oct. 6, 1904.
22	Point Clear.....	Mrs. M. McLeod.....	50 00	"	Dec. 1, 1906.
23	S. S. Bouliarderie.....	Donald McKae.....	50 00	"	Jan. 1, 1907.
24	Bouliarderie West.....	John McIntyre.....	50 00	"	Jan. 1, 1907.
25	Hillside.....	Mrs. Christina McKenzie.....	50 00	"	Feb. 1, 1907.
26	Groves Point (1 mi. M. C. poles).....	Mrs. Mary Dunlop.....	50 00	"	" 1, 1906.
27	Alder Point (loop line).....	Mrs. John Aresnault.....	50 00	"	" 1, 1906.
28	Little Bras d'Or (M.C. poles).....	Miss D. Edna Grantmyer.....	50 00	"	Dec. 1, 1906.
29	North Sydney—Little Bras d'Or (2nd wire).....	W. U. Tel. Co.....	Commission only.....	"	"
30	North Sydney.....	John J. McLean.....	50 00	"	Mar. 25, 1907.
31	Gill's Lake.....	Daniel H. Gillis.....	50 00	"	Feb. 28, 1907.
32	East Bay.....	Miss M. L. McNeil.....	50 00	"	"
33	North Side East Bay.....	James J. Gillis.....	50 00	"	Jan. 15, 1907.
34	Esksani.....	Sadie McMillan.....	50 00	"	Dec. 6, 1907.
35	Castle Bay.....	Miss Maria McDonald.....	50 00	"	Jan. 10, 1907.
36	Grand Narrows.....	Daniel McNeill.....	50 00	"	May 27, 1909.
Totals.....			3,010 00		

Switching point for Baddeck line.

Salary.—\$120 per year previous to this appointment.
Former Agent, Mr. A. Anderson.
This loop to Baddeck starts from and returns to
Englishtown.

Increase from \$50 to \$100 since November 1, 1901.

The commission is 25 p. c. of the Govt. line tolls in
each instance, and is guaranteed to amount to not
less than \$50 per annum.

The commission is 50 p.c. on local business and 25 p.c.
on through messages; and covers supervision of
line and office accommodation at North Sydney.

*Branch to Upper Kempt Head.

†North Sydney—Esksani Branch.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.

CAPE BRETON SECTION—Continued.

MEAT COVE TO NORTH SYDNEY AND GABAROUS WITH BRANCHES—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.		Date of Appointment.	Memo
				\$	cts.		
	<i>Repairs Sections.</i>	Miles.					
	Meat Cove — Half-way Shanty.....	5	R. Fraser	40 00	or commission	May 26, 1903.	
	Half-way Shanty—Poulets Cove.....	5	E. Fraser	30 00	"	" 20, 1903.	
	Poulets Cove—Pleasant Bay	10	K. Fraser	40 00	"	" 20, 1903.	
	Pleasant Bay—Barren	15	E. J. Timmons	40 00	"	Mar. 16, 1909.	
	Barren—Cheticamp	11	J. A. Chasson	40 00	"	July 1, 1905.	
	Cheticamp—Grand Etang	8	Joseph L. Chasson	40 00	"	" 1, 1905.	
	Grand Etang—Margaree	18	H. K. McLean	25 00	"	" 1, 1905.	
	Margaree H.—S. W. Mar- garee	8	Alex. McFarlane, sr.	40 00	"	" 4, 1902.	
	S. W. Margaree — Strath- lorne	18	J. D. McFarlane	40 00	"	June 4, 1902	
	Strathlorne—Mabou.....	13	L. G. McDougall	40 00	per annum...	Nov. 3, 1902.	
	Mabou and Judique	20	J. A. Campbell.....	50 00	"	Aug. 1, 1904.	
	Judique and Port Hawkes- bury	21	J. N. Melsaac.....	50 00	"		
	Alder Point — Little Bras d'Or.....	6	Captain John Arsenault...	50 00	"		
	Big Bras d'Or — Upper Kempt Head.....	36	J. A. C. McKenzie.. ..	50 00	"		Appointments date from June 1, 1907.
	Little Bras d'Or—Upper Kempt Head	36	R. R. McKenzie	50 00	"		
	North Sydney—Gillis Lake	16	Angus J. McLean.....	50 00	"	June 17, 1902.	
	Gillis Lake—Eskasoni.....	15	Duncan Gillis.....	50 00	"	July 14, 1903.	
	Murray—Indian Brook.....	14	John Smith.....	25 00	"	Nov. 1, 1904.	
	" North Sydney	17	Dan Campbell	100 00	"	" 1, 1898.	
	Englishtown—Baddeck	17	D. McAulay	60 00	"	" 1, 1898.	
	Ingushish—Englishtown	36	R. A. McDonald	100 00	"	April 1, 1898.	
	Sugar Loaf—Ingushish	30	Charles Smith	100 00	"		Increase from \$80 since June 1, 1903.
	Meat Cove—Sugar Loaf.....	12	M. McAskill.....	80 00	"		
	<i>General Repairs.</i>						
	Meat Cove—Hawkesbury	156	V. A. McLellan	420 00	per annum...	Mar. 1, 1905.	Salary covers horse-hire, &c.
	Port, Hawkesbury — Gab- arous.....	96	G. F. Bisset	420 00	"	Aug. 1, 1904.	

SESSIONAL PAPER No. 19

North Sydney Scutario.....	86½	E. M. Dickson	540 00	" 1, 1907.
Parkson Boulevard.....	106	Joseph Legue.....	540 00	
Branch	182	S. S. Burke.....	420 00	April 1, 1904. Payment includes horse-hire.
Big Bras d'Or Meat Cove				
<i>District Superintendent.</i>				
St. John, N. B.		D. C. Dawson.	720 00	Jan. 1, 1887.
Totals.....	626½		4,250 00	

CHATHAM-ESCUMINAC, N. E., TELEGRAPH SYSTEM.

		Great Northwestern Telegraph Co.	185 00		This amount is paid for supervision of the line and office accommodation at Chatham.
1 Chatham	0			1, 1901.....	The commission is 25 p. c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than \$50 per annum.
2 Black Brook	5½	M. McLaughlin	50 00 or commission.	July 1, 1885.....	
3 Rap du Vin	15	Mrs. M. Williston.....	50 00	Mar. 1, 1891.....	
4 Lower Hardwicke	6	Mrs. M. Brimmer.....	50 00	Aug. 1, 1885.....	
5 Escuminac.....	3½	D. Lewis	50 00	Sept. 1, 1883.....	\$12 per annum allowed for care of main battery at Point Escuminac.
6 Point Escuminac Lighthouse	12	K. R. McLeannan.....	50 00	Nov. 1, 1891.....	
Totals.....	42½		435 00		

RAY OF FUNDY, N. E., TELEGRAPH SYSTEM.

GRAND MANAN SECTION.

<i>Long Eddy Cable Hut to.</i>					
1 Flagg's Cove	3	Mrs. C. C. Seely (D. Sn.)	540 00	Nov. 18, 1880.....	*The commission is 25 p. c. on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of \$50 per annum. When 50 p. c. commission is paid there is no guarantee as to amount.
"		Miss V. A. McFarlane	50 00 or commission.	Oct. 1, 1903.....	
"		A. Gilmour, repairer.....	60 00	Dec. 1, 1894.....	
2 Castalia	2½		Commission 25 p. c.	June 1, 1898.....	\$25 per annum is included for repeating Whitehead branch.
3 Woodwards Cove	3½	G. E. Dalzell.....	" 50 p. c.	Feb. 28, 1893.....	
4 Grand Harbour	2½	J. L. Newton.....	75 00 or commission.	April 1, 1887.....	
5 Seal Cove	4½	J. A. Ingersoll.....	50 00	Sept. 22, 1899.....	
6 "	4½	Mrs. Robert Fraser.....	25 00	Aug. 1, 1907.....	
7 Southern Head Lighthouse.	5½	C. Ingersoll.....	Commission 25 p. c.	April 22, 1897.....	Southern Head office is now operated by telephone from Seal Cove.
<i>Branch Line.</i>					
8 Grand Harbour	0				
Cheneys Island, (½ knot cable)	4½	S. E. Russell	" 25 p. c.	Feb. 1, 1891.....	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.

BAY OF FUNDY, N.E., TELEGRAPH SYSTEM—Continued.

GRAND MANAN SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Branch Line—Con.</i>	Miles.		\$ c.		
9	Whitehead Island ($\frac{3}{4}$ knot cable, Long Eddy to Liberty Cove.....	1 $\frac{3}{4}$ 7 $\frac{1}{4}$	Mrs. W. Cassaboon..	50 00 or commission..	Feb. 1, 1903.....	
10	Liberty Cove Cable <i>Hut</i> to Welchpool.....	7 $\frac{3}{4}$	Wellington Parker, Lieutenant.....	2 00 per day.....		Employed occasionally.
11	Cable across channel.....	4 $\frac{1}{2}$	G. E. Mitchell.....	210 00 and commission.	May 1, 1905.....	
	Eastport, Maine, U.S.A.....	3 $\frac{1}{2}$	J. Cushing.....	200 00	Dec. 26, 1881.....	
	Totals.....	44 $\frac{1}{2}$		1,035 00		

MAGDALEN ISLANDS SYSTEM.

MAGDALEN ISLANDS SECTION.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
1	Amherst.....	0	Miss J. Shea.....	50 00 or commission..	Oct. 1, 1882...	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum.
2	Amherst Lighthouse.....	9	Wm. Rneau.....	120 00	June 9, 1908...	Plus \$1 per day when absent on duty.
3	Étang du Nord village.....	15	Wm. Cormier.....	50 00	June 11, 1881...	Two wire loop line.
4	Étang du Nord Lighthouse	1	I.G. Binet, gen. repairer	500 00	Dec. 1, 1900.....	Plus \$1 per day when absent on duty. The salary was \$720 per annum prior to July 1, 1908.
5	Grindstone Island.....	5	Mrs. A. Binet.....	100 00	Sept. 1, 1881.....	Temporary assistant.
6	Grindstone West.....	.....	N. Arseneault.....	50 00	May 20, 1897...	
			W. Leslie.....	Commission 25 p.c..	Aug. 17, 1880...	
			A. LeBourdais, dis.supt	900 00	Sept. 15, 1893...	
			Mrs. Lebourdais, oper	50 00	May 25, 1904.....	
			J. J. Lebourdais.....	37 00 per month.....		
7	House Harbour ($\frac{1}{2}$ knot cable).....	3	Camille Delaney.....	50 00 or commission..	June 1, 1903.....	
8	Wolfe Island.....	28 $\frac{1}{2}$	N. Clark.....	360 00 or commission..	June 1, 1888...	For repeating station. Prior to Dec. 1, '02, the allowance was \$200 and commission for local agency.
9	Grosse Isle	11	J. Quinn.....	180 00	Dec. 1, 1902...	

SESSIONAL PAPER No. 19

Old Harry.....		L. C. Clarke	50 00	Mar. 8, 1907.....
Grand Entry.....	11	Mrs. F. Atkins.....	50 00	Feb. 18, 1882.....
Point Basse—2 wire loop from House Harbour.....	4	H. Arsenault.....	50 00	Aug. 1, 1902.....
South beach—2 wire loop.....	3	F. Chevrier.....	50 00	July 1, 1903.....
Byron Island.....	1	W. Dingwell.....	150 00	Jan. 1, 1903.....
	91½		2,850 00	

Two-wire loop line from terminal hut for Grosse Isle and Anticosti cables.

Grosse Isle connects at Old Harry with Meat Cove, C.B., by cable 55 knots; and connects with Byron Island by cable 11 knots; thence to Heath Point, Anticosti, 93 knots.

ANTICOSTI TELEGRAPH SYSTEM.

1 Fox Bay.....	20	Gro. Cabot.....	350 00	May 13 1900.....	For local agency.
2 Heath Point	23	(C. Hubert.....	200 00	Aug. 1, 1900)	For cable repeating station.
3 South Point Lighthouse.....	32½	E. Leprise	100 00	Sept. 1, 1907)	
4 Shallop Creek.....	17½	B. Bradley	300 00	July 1, 1903.....	
5 Salt Lake.....	52½	Jos. Bourget rep.	420 00	" 7, 1881.....	
6 Southwest Pt. Lighthouse.....	15	Mrs. Bourget, opt.	100 00	" 17, 1906.....	Plus \$1 per day when on duty as general repairer.
.....		(A. Z. Lemieux.....	480 00	" " " 1, 1901.....	
Jupiter River.....	7	Z. Lemieux	180 00	" " " 1, 1908.....	
Orter River.....	17½	.....	50 00	.....	
Besete River.....	22	.....	50 00	.....	
Cape Eagle (Ellis Bay).....	10	Jas. Duguay.....	100 00	June 20, 1906.....	
.....		(A. Malouin, dist. supt.	404 00	Aug. 1, 1900.....	
7 West Point Lighthouse.....	9	" " opr.	100 00	" 10, 1881.....	
.....		Liz. " substitute, opr.	480 00	.....	
8 English Bay.....	3	F. Cabot	360 00	July 1, 1882.....	
.....		H. Malouin, repairer	420 00	.....	
Mechastic Bay (cable land- ing).....	14½	.....	.....	.....	
Totals	223½	.....	4,314 00	.....	

Southwest Point connects with L'Anse à Fougère, Gaspé, by cable 44½ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

0 L'Anse à Fougère.....	.....	Thos. Dupuis.....	17 00	.....	Special allowance for the cable terminus. A testing station only.
1 Gaspé Basin.....	28	J. J. Annett	540 00	Oct. 16 1881	Transfer office. Connection with G. N. W. telegraph system. The salary was \$180.00 per year previous to January 1, 1908.
	28	.....	557 00	.....	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

No.	Stations.	Inter- mediate Distance	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Bay St. Paul		F. Boivin	360 00 per annum†	April 1, 1885	*The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than \$50 per annum. Salary increased to \$150 per annum, June 1, 1907. Plus \$25 per year for operating branch line to L'Anse St. Jean. J. Fortin's division includes the branch line to L'Anse St. Jean. †Salary increased to \$360 per annum, June 1, 1907.
2	St. Urbain	9	(A. Boivin	25 p.c. commission	"	
3	La Galette	37	(Michel Fortin, rep'ter	50 00 or commission	"	
4	Ferland	27½	S. Ouellette	270 00 per annum...	Aug. 25, 1902	
5	St. Alexis	10	B. Laviolette	150 00 or commission	Mar. 1, 1905	
6	St. Alphonse de Bagotville.	3	Mrs. D. Sinard	50 00	Nov. 1, 1899	
7	Chicoutimi	11½	Mrs. C. Levesque	75 00	June 1, 1906	
				150 00 per annum...		
		98		1,105 00		
	<i>Branch Line.</i>					
8	St. Alexis	0	Mrs. D. Sinard	75 00		
9	L'Anse St. Jean	30	P. V. Laviolette	50 00	Nov. 1, 1905 ..	
10	Petite Saguenay	8	Eris Degagné, rep'ter..	350 00	"	
11	Anse Cheval	6	M. Tremblay	50 00	Sept. 1, 1903 ..	
12	St. Etienne	7	Jos. Degagné	50 00	Feb. 1, 1905 ..	
	St. Catherine Bay	17	G. Boulianne (see North Shore W. B. Line) ..			(This office had been closed since April 30, 1904.)
		78		575 00		
	Totals	176		1,680 00		

SESSIONAL PAPER No. 19

MURRAY BAY—ST. AGNES SECTION.

1	Murray Bay	0	Mrs. F. Vincent .....	.....	.....	(See Murray Bay, Bersimis section.)
2	St. Agnes	7½	Jos. Gaudreault	50 00	Jan. 1, 1904	
	Trinity (Guay)	7	Jos. Demeules	50 00	May 1, 1906	
		14½		100 00		
1	Bay St. Paul	0	F. Boivin .....	.....	.....	(See Bay St. Paul, Chicoutimi section.)
	Petite River	13	Les Bouchard	50 00	.....	(Payment at Bay St. Paul \$25 per year and \$12 for battery care, for operation of this branch to Petite River.
		13		50 00		

Connections for these lines with the C. N. W. Telegraph System are made at Chicoutimi, Bay St. Paul and Murray Bay.

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM *Continued.*CHICOUTIMI SECTION—*Continued.*

1	Tadoussac	0	Eugene Caron	Commission	.....	
2	Sacré Cœur	12½	J. H. Gravel, repairer	360 00	.....	
			Miss L. Maltais	50 00	.....	
3	Ste. Marguerite	8	Mrs. P. Hervieux	50 00	Sept. 1908	
4	Price Bros. & Co.	2	Elzéar Lavoie	Accommodation.	.....	
5	Descente des Femmes	34	Company	50 00	.....	
6	Lac Laurent	9	Ang. Villeneuve	50 00	.....	
7	Ste. Fulgence	8	S. Gagnon	50 00	.....	
8	Ste. Anne	8	G. H. Gagnon	50 00	.....	
9	Chicoutimi	1	P. Gauthier, repairer .....	.....	.....	
			D. Villeneuve .....	.....	.....	
1	St. Anne	8	P. Gauthier, repairer	300 00	Aug. 1, 1903	Salary increased to \$300 per annum April 1, 1907.
2	Shipshaw	3	Miss M. Dufour	50 00	Nov. "	
3	Shipshaw, North	6	J. Murdoch	50 00	1, 1903	
4	St. Leonard	7	Géo. Gagnon	50 00	Sept. 1, 1903	
5	St. Ambroise	10	A. Simard	50 00	June 1, 1905	
6	St. Charles	0	B. Bouchard	50 00	Sept. 1, 1903	
7	Tacite	7	Jean Fradette	50 00	Jan. 1, 1908	
8	St. Joseph d'Alma	3	Elie Gagné	50 00	" 1, 1908	
			Gédon Verreault	360 00	Mar. 1, 1909	
9	St. Cœur de Marie	5	Alfred Rousseau	50 00	Jan. 1, 1908	
10	St. Henri de Taillon	6½		.....	.....	
11	Honfleur	8	Charles Lindsay	50 00	Jan. — 1909	
12	La Pique	0	Hypolithe Boivin	50 00	" 1, 1908	
13	Peribonka	1	Mrs. E. Niquette	50 00	.....	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE.—Continued.
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.—Continued.
CHICOUTIMI SECTION.—Continued.

No.	Stations.	Inter- mediate Distance	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
<i>Chicoutimi</i>						
		3	J. C. Taché, Dis. Supt. P. Villeneuve, operator A. Simard, inspector T. Villeneuve, night op. J. A. Conet, clerk A. Gagné, messenger J. Fortin, repairer	300 00 660 00 564 00 480 00 180 00 120 00 420 00	Jan. 1, 1905. April 1, 1905. " 1, 1905. June 1, 1897.	
	<i>Branch Line.</i>	37		4,484 00		
1	St. Anne.....	0	P. Gauthier.....	50 00	Jan. 1, 1904.	(See St. Charles—Chicoutimi section.)
	St. Fulgence.....	0	Rev. Geo. Gagnon John Brisson	360 00		
		9		410 00		
	St. Anne.....	3	P. Gauthier.....	50 00	Feb. 1, 1904.	
	Range 9.....	3	Thos. Simard.....	50 00	Nov. 1, 1905.	
	Lac Charles.....	9	A. Dufour.....	50 00	" 1, 1901.	
	Lac Clair.....	15	L. Boulianne.....	50 00	" 1, 1905.	
				200 00		
<i>NORTH SHORE (West of Bersimis).</i>						
1	Murray Bay.....	0	Mrs. F. Vincent.....	50 00 or commission.	April 1, 1885.	Plus \$25 per year, and \$12 for battery care for operation of branch to Guay.
2	Cap à l'Aigle.....	4	Miss S. Bergeron.....	50 00	June 1, 1905.	
3	St. Fidèle.....	6	Jos. Desbiens.....	50 00	Dec. 1, 1904.	
4	Port au Persil.....	7	A. Brassard.....	50 00	May 1, 1889.	
5	St. Siméon.....	4	A. Brassard, repairer	360 00	June 1, 1887.	
6	Bate des Rochers.....	12	Johnny Tronblay.....	50 00	Aug. 1, 1907.	
7	St. Catherine's Bay.....	18	Mde D. G. Savard.....	50 00	Nov. —, 1886.	
8	Tadoussac (1½ knot cable)....	1½	G. Boulianne..... Mde G. Boulianne..... J. E. Caron..... L. Maltais.....	360 00 240 00 50 00 50 00	Nov. 1, 1888. Dec. 6, 1901.	

SESSIONAL PAPER No. 19

9	Bon-Desir	10	Mde E. Gauthier.....	50 00	"	Aug. 1, 1901.	
10	Bergermans.....	5	Mde M. Savard.....	50 00	"	April —, 1885.	
11	Escamans.....	12	J. H. Topping.....	50 00	"	" —, 1885.	Commission at 25 per cent, without guarantee at Baie
12	Baie des Bacons.....	8	P. Bonchard.....			May 6, 1902.	des Bacons.....
13	Sault au Monton	8	C. E. Nolet.....	50 00 or commission.	"	Nov. 1, 1906.	
14	Mille Vaches.....	11½	Mde L. Pizé.....	50 00	"	Aug. 1, 1907.	Accommodation office.
15	Anse Hamilton.....	6	C. P. Easton.....	50 00 or commission.		Sept. 1, 1903.	
16	Portneuf, light	7	Leandro Bonchard.....	420 00.		April 1, 1888.	
17	Sault au Cochon	31	E. Courbron, repairer	50 00 or commission.		Sept. 21, 1896.	Sault au Cochon closed September 30, 1896.
18	Bersimis.....		(Mrs. A. Maloney, agent.....	550 00.		July —, 1906.	
			(E. Pope, Dist. Supt.	600 00.		April —, 1885.	
		151		3,460 00			

*NOTE. In the estimates, the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

NORTH SHORE (East of Bersimis).

1	Bersimis	0	{ H. Tremblay	50 00 or commission.	Dec. 1, 1896.		
2	Pointe aux Outardes	29	{ W. Montreuil, line-man	420 00 per annum.	Aug. —, 1901.		
3	Pte. Paradis.....	18	and operator.....				The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.
4	Manicouagan.....	14	N. A. Comeau.....	50 00 or commission.	Oct. 15, 1885.		
5	Mistassini.....	22	L. F. Faffard.....	50 00	Dec. 28, 1883.		
6	River Godbout.....	26	Z. Paulin.....	50 00	May 16, 1884.		
7	Pointe des Monts.....	18½	A. Bilodeau.....	25 p.c. or commission.	" 1, 1889.		
8	Trinity Bay West.....	5½	I. Comeau.....	"	Sept. 1, 1889.		No commission is paid at this office.
9	Trinity Bay East.....	2½	Paul Côte.....	Accommodation office.....	Jan. 10, 1895.		
10	Caribou Islands.....	10½	P. Molloy.....	250 00 per annum.	Sept. 17, 1905.		
11	Pontecoste.....	6½	A. Theriault.....	180 00 per annum.	July 1, 1888.		
12	Ste. Marguerite.....	47½	Accommodation office.....	25 p.c. commission.	April 17, 1903.		
13	Clark City.....	5	{ P. E. Vignault.....	180 00 per annum.	Jan. 2, 1884.		
14	Seven Islands.....	17½	{ F. Gallienne, rept.....	540 00	Nov. 5, 1906.		Plus 50 cents per day when absent on duty.
15	River Moisie.....	15½	{ J. Poirier.....	50 00 or commission.	Oct. 1, 1896.		There is also an accommodation office in operation at Moisie in the fishing season.
16	Pigon.....	28	{ Mrs. Peter Wright, op	100 00	June 1, 1902.		
17	Rivière aux Graines.....	29	{ Peter Wright, rept.....	112 00	" 1, 1902.		
18	Sheldrake.....	28	Miss H. Leberge.....	50 00	" 10, 1900.		
19	Thunder River.....	15	Mrs. Alphonse Girard.....	50 00	Dec. 1, 1904.		
20	Magpie.....	6½	Mrs. H. Cady.....	50 00	Feb. 1, 1890.		
21	St. John River.....	9	B. Chambers.....	50 00	Oct. 1, 1889.		
		10	{ E. H. Tetu, dist. supt.	1,080 00 per annum.	Nov. 1, 1891.		Long Point is the repeating office for the Anticosti cable in operation since September 1, 1891.
			{ Mrs. E. H. Tetu, op.....	300 00	" 1, 1903.		
			{ A. Fournier, op.....	500 00	Sept. 11, 1906.		
			{ Mrs. Fournier.....	116 00	"		
		7	E. Maloney.....	160 00 or commission.	"		Salary increased to \$100 per annum, March 31, 1907.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM—Continued,

NORTH SHORE (East of Berisimis) Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum. \$ c.	Date of Appointment.	Memo.
22	Point Esquimaux	Miles.	(Mrs. D. C. Hould (Edwd. Cyr, inspr.	240 00 per annum.	Sept. 1, 1897	Allowance for office rent \$4 per month. Plus 50 cents per day when absent on duty.
23	Betchouanes	24	(Jos. Picard, op. & rep.	500 00 "	Nov. 15, 1904	
21	Piastre Bay	20	(S. Tanguay, repr.	212 00 "	July 18, 1902	
25	Watichou	23	(Mrs. J. Beetz, opr.	112 00 "	Sept. 18, 1902	This office was closed on withdrawal of former agent from Sept. 4, 1903, \$12 rent to J. Beetz.
26	Aguanau	15	(Mrs. Cl. Bourque, op.	100 00 "	Dec. 1, 1903	
27	Natashtquan	21	(John Bourque, repr.	100 00 "	1, 1903	
28	Kogaska	21 3/4	(S. Galant, repr.	112 00 "	Sept. 3, 1902	Plus 50 cents per day when absent on duty.
29	Masquaro	21	(Mrs. Galant, opr.	100 00 "	" 3, 1902	
30	Romaine	33	(C. Vignault, repr.	112 00 "	" 5, 1902	
31	Wolf Bay	24	(Miss Vignault, opr.	100 00 "	" 5, 1905	Plus 50 cents per day when absent on duty.
32	Pointe au Maurier	24	(Geo. Anderson, repr.	112 00 "	" 16, 1902	
33	Harrington	20	(Miss Anderson, opr.	100 00 "	" 16, 1902	
34	Whale Head	18	(J. L. Osborne, inspr.	500 00 "	" 1, 1902	Plus 50 cents per day when absent on duty.
35	Mutton Bay	25	(Win. Foreman, op. & rep.	212 00 "	June 1, 1903	
36	Pai-de-Ha	24	(M. Blas, repr.	112 00 "	Sept. 17, 1902	
37	St. Augustine	27	(Miss R. Blas, repr.	100 00 "	17, 1902	Plus 50 cents when absent on duty.
38	Chicaica Bay	21	(R. Jones, repr.	150 00 "	Nov. 26, 1902	
39	Rocky Bay	30	(Mrs. R. Jones, ...	100 00 "	"	
40	Pomme Esperance	21	(J. Galibois, repr.	112 00 "	Sept. 19, 1902	Plus 50 cents when absent on duty.
41	Brador Bay	29	(Miss P. Galibois	100 00 "	19, 1902	
			(J. Jones, repr.	112 00 "	Sept. 20, 1902	
			(Mrs. Jones, opr.	100 00 "	" 20, 1902	Plus 50 cents when absent on duty.
			(Nap. Nadeau, rep. & opr.	212 00 "	Jan. 21, 1903	
			(Alf. Cormier, rep. & opr.	444 00 "	June 1, 1902	
			(Mrs. J. Monger, opr.	100 00 "	" 14, 1904	Plus 50 cents when absent on duty.
			(J. J. Monger, rep.	112 00 "	" 14, 1904	
			(G. W. Burgess, rep. & opr.	212 00 "	Sept. 25, 1902	
			(Mlle Esther Robin	100 00 "	"	Plus 50 cents when absent on duty.
			(George Robin	112 00 "	April 29, 1904	
			(Miss B. E. Chevalier, o.	100 00 "	" 29, 1901	
			(L. O. Chevalier, rep.	112 00 "	Oct. 2, 1902	Plus 50 cents when absent on duty.
			(G. Chevalier, repr.	110 00 "	" 2, 1902	
			(Johnny Jones, opr.	100 00 "	June 13, 1903	
			(P. C. Vignault, insp.	500 00 "	Feb. 1, 1903	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—*Continued.*
GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM—*Continued.*

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
8	Grosse Isle quarantine office (including 2 knots cable).	3½	Miss Julia Legacé....	180 00 and 25 per cent commission.....	June 1, 1906...	\$1 per month for messenger serv. in summer, and \$12 p. annum allowed for care of main batt. at Gr. Isle.
	Quarantine telephone sys- tem 2 wire line.....	1½				NOTE.—The telephone system on Grosse Isle since May, 1893, has comprised 1¼ miles of 2 wire line with 11 connections or stations.
	Totals.....	52¾		1,675 00		
	<i>Loop Line (2 wires).</i>					
	St. Francois—St. Francois- Nord (looped wire)...	5	Mrs. Irène Labbé.....	50 00 or commission	July 1, 1907.....	
	St. Jean-St. Famille.....	5½	P. Létourneau.....	50 00 or commission	April 2, 1904.....	
	St. Francois to Bay St. Paul (cable).....	30		100 00		
	Crane Island to Montmagny (cable).....	3½				
	Crane Island to Grosse Isle (cable).....	5				
ONTARIO—PELEE ISLAND TEL. SERVICE.						
	District Supt.'s house.....	0	J. McR. Selkirk, dis. sup.	50 00 per annum	Nov. 1, 1888....	
1	Leamington.....	0	"	Commission 20 p. c.	Nov. 2, 1904....	
2	Bairds.....	1½	Accommodation office.			
3	Leamington Dock (Lake Shore).....	1	E. M. Delaurier, accom- modation office.		" 1, 1895....	
	Bairds House.....	1	Alex. Baird.....	Commission 25 p. c.	April 1, 1905....	This is the connection that was formerly made with the club house nearby.
4	Tildens.....	7½	W. Tilden.....	"	Nov. 1, 1888....	
5	Point Pelee.....	2½	W. A. Grubb.....	"		
	Leamington Dock to North Point Cable.....	17			Nov. 1, 1888....	The cable formerly 9½ knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901.

SESSIONAL PAPER No. 19

6 North Point Lighthouse...	3	J. R. Ledwell.....	Commission 25 p. c.....	June 1, 1899.....	Accommodation office, formerly Dr. H. O. Van Epps.
7 North Dock.....	0	C. B. Quick.....	" " " " " " " "	Nov. 1, 1888.....	
8 Ouellette.....	0	A. Ouellette.....	" " " " " " " "	" " " " " " " "	
9 McCormicks.....	5	W. J. McCormick.....	Private instrument.....	" " " " " " " "	
10 West Dock.....	3	A. M. McCormick.....	Commission 25 p. c.....	Nov. 9, 1888.....	
11 Singley.....	3	James Strigley.....	" " " " " " " "	Oct. 25, 1907.....	
South Dock.....	2	R. E. McCormick.....	" " " " " " " "	Aug. 1, 1904.....	
Totals.....	42 $\frac{3}{4}$		50 00		

NOTE:—This line is operated by telephone.

QU'APPELLE—ATHABASKA LANDING SECTION.

1 Qu'Appelle.....	0	C. P. R. Tel. Co.....	420 00	Dec. 1, 1906.....	The agent operator at Qu'Appelle is joint with the C. P. R.
2 Ft. Qu'Appelle.....	17	J. W. Wilson, line-man	600 00	Mar. 1, 1902.....	
3 Lipton.....	11	P. R. Elmer.....	600 00	Aug. 15, 1906.....	Miss Johnstone resigned Aug. 15, 1906.
4 Touchwood.....	29	C. P. R. Tel. Co.....	Commission 10 p. c. ..	May 1, 1906.....	Agent operator at Lipton, joint C. P. R.
5 Kutawa.....	6	J. Kelly.....	720 00	June 1, 1906.....	Agent operator paid by H. B. Co.
6 South Humboldt.....	78	A. VonLindeburgh.....	720 00	Nov. 1, 1883.....	
7 Saskatoon.....	69	H. J. Macdonald.....	300 00	Feb. 1, 1904.....	
		C. P. R. Tel. Co.....	600 00	Jan. 1, 1892.....	
		G. T. Clement, line-man		Oct. 16, 1903.....	
8 Waman.....	14	Can. Nor. Ry. Co.....	Comm. 25 p. c. of receipts	Nov. 23, 1905.....	Agent operator joint with C. P. R. Can. Northern
9 Henrietta.....	38	W. J. Salisbury.....	720 00	Oct. 1, 1886.....	agent acts as agent on commission.
10 Battleford.....	47	J. D. Noel.....	720 00	" " " " " " " "	Operated on commission.
11 Presavlor.....	27	Wm. Dowan.....	600 00	Mar. 1, 1907.....	G. Donovan resigned July 31, 1906.
12 Lloydminster.....	70	J. T. Gallahan.....	720 00	Dec. 1, 1900.....	
13 Onion Lake.....	50	E. A. McCleneghan.....	600 00	April 1, 1904.....	
14 Moose.....	33	H. McCleneghan.....	720 00	Aug. 1, 1899.....	
15 St. Paul des Metis.....	32	G. G. Mann.....	720 00	" " " " " " " "	
16 Saddle Lake.....	13	C. Boulane.....	600 00	Nov. 1, 1902.....	
		J. W. Carroll.....	720 00	Nov. 1, 1906.....	J. A. Therien, resigned Oct. 31, 1906.
17 Victoria.....	37	R. Gordon.....	600 00	Sept. 1, 1900.....	Telephone Line from Saddle Lake to Industrial School 6 $\frac{1}{2}$ miles.
18 Andrew.....	10	B. Carey.....	600 00	Feb. 15, 1906.....	Telephone Line from Andrew to Whitford 6 miles.
19 Star.....	18	C. Noru, line-man.....	600 00	" " " " " " " "	
20 Ft. Saskatchewan.....	25	E. A. Holmes.....	600 00	Aug. 2, 1904.....	
21 Edmonton.....	18	A. W. M. Campbell.....	600 00	Oct. 1, 1898.....	
22 Half Way Lake.....	49	Geo. E. MacLeod.....	900 00	Nov. 6, 1906.....	
23 Athabaska Landing.....	49	W. McKay, line-man.....	780 00	May 1, 1886.....	
		Miss C. Egge.....	Commission 25 p. c. ..	Oct. 1, 1908.....	
		Jas. McKernan.....	600 00	" " " " " " " "	
	750		15,360 00		

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.
QU'APPELLE—ATHABASKA LANDING SECTION—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ c.		
24	Whitford.....	7	The postmaster.....	Commission 25 p. c.....	July 1, 1905.....	Connection is made with the telegraph office at Andrew.
BRANCH LINES.						
25	Edmonton	8	{ R. C. McDonald, supt. J. S. Macdonald, gen. ins.	1,800 00 per annum..... 2,000 00 "	Oct. 1, 1905... June 1, 1905...	Salary increased to \$1,800 April 1, 1908. These branch lines are operated by the Edmonton District Telephone Co.
26	Winterburn.....	5½	.....	.....	.....	
27	Stoney Plain.....	8	.....	.....	.....	
28	Spruce Grove.....	6½	.....	.....	.....	
29	Stoney Plain Station	3½	.....	.....	.....	
30	" Centre.....	9	.....	.....	.....	
31	St. Albert.....	12	.....	.....	.....	
32	Ray.....	8	.....	.....	.....	
33	Riviere-qui-Barre.....	5	.....	.....	.....	
34	Alexandria.....	65½	.....	3,800 00	.....	
WOOD MOUNTAIN SECTION.						
1	Moosejaw.....	60	{ C. P. R. Tel. Co... H. Sikes, batteryman..	240 00 120 00	Dec. 1, 1891..... Dec. 1, 1893.....	The Agent operator at Moosejaw is joint with C.P.R.
2	Limerick.....	30	{ J. W. Wilson..... J. H. Thomson.....	720 00 600 00	Oct. 1, 1908..... Dec. 1, 1890.....	
3	Wood Mountain.....	40	{ F. Brown, lineman... M. A. Noel.....	600 00 600 00	Nov. 1, 1905..... Oct. 19, 1904.....	
4	Willow-Bunch.....	130	.....	2,880 00	.....	

SESSIONAL PAPER No. 19

DUCK LAKE SECTION.

1	Batoche	D. H. Grant	120 00	Oct. 1, 1902.....	A. H. Gordon resigned March 31, 1907.
2	Duck Lake	W. J. Leamouth	120 00	Dec. 1, 1907	
			240 00		

BANFF TELEPHONE SYSTEM.

Local System in Banff National Park		H. Douglas (supt.) J. H. Grierson (line man).....			This system is looked after by Mr. Douglas, superintendent of the National Park.
			25 00	.....	
			25 00	.....	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.

LINES IN BRITISH COLUMBIA.

No.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Kamloops—Lower Nicola, Telephone Line.</i>	Miles.	(See note in margin).		\$ cts.		
1	Kamloops	0	C. S. Stevens.	Dist. Supr.	1,200 00	June 1, 1904	NOTE.—The lessees pay a monthly rent for the connections, and are allowed 25 per cent commission on local tolls for messages and conversations of non-subscribers. Three additional connections in July, 1901. Add at Nicola Lake, July 1, or Government Office, Dr. Sutton, A. R. Carrington.
2	Anderson Creek	12	Miss B. McKnight.	Clerk & Agent	420 00	July, 1901	
3	Nicola	12	W. McLeod.	Agent	480 00	" 1901	
5	Stumps Lake	13	Mrs. M. V. Munro.	Exc. oper.	480 00	" 1901	
6	Beaver Ranch	20	Thos. Bunman	"	.....	" 1901	
7	Quelchena	9	J. W. Moor	"	.....	May, 1900	
8	Nicola Lake	9	E. O'Rourke.	"	.....	" 1900	
9	Coutlee	13	A. E. Howse	"	.....	July, 1901	
10	Lower Nicola	24	Blair & Co.	"	.....	May, 1900	
11	Aspen Grove	2	G. Armstrong.	"	.....		
12	Princeton	26	A. E. Howse & Co.	"	180 00	Feb. 1, 1905	See note in body of report.
13	Hedley	25	John Love.	Exc. oper.	480 00	" 1, 1905	
14	Keremeos	20	"	"	.....	" 1, 1905	
15	Fairview	12	"	"	120 00	" 1, 1905	
16	Penticton	37	J. A. Schubert.	"	.....		
	Total	235			2,880 00		
	<i>Vernon—Kilowna Line.</i>				\$ cts.		This line is operated both as a telephone and telegraph line.
1	Vernon	0	Miss G. E. Seaton	Agt. and oper.	360 00	Mar. 1, 1905	Joint agent with C. P. Telegraph. The commission is 25 per cent of the Government line tolls.
2	Kilowna	35	A. S. Muir	Telephone agt.	Commis. 720 00	" 1, 1905	
			H. H. Miller & Co.	Agt's tel. & tele	720 00	Aug. 1, 1905	
			A. L. Weeks	Lineman	.....		
	Total	35			1,800 00		

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

No.	Stations.	Inter- mediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appoint- ment.	Memo.
	<i>Victoria—Cape Beale.</i>	Miles.	(See note in margin).	\$ cts.		
1	Cape Beale.....	0	W. L. Thompson.....	480 00	Oct. 6, 1908	NOTE.—The superintendence of this line has been in the hands of the resident architect at Victoria since October, 1901, when the arrangements theretofore in operation with the C. P. Ry. Co. were terminated. Formerly at Uchuellet.
2	Carmanah.....	28	W. P. Daykin.....	360 00	Nov. 1, 1891	
3	Port Renfrew.....	24	Mrs. E. C. Williams.....	480 00	Sept. 22, 1903	
4	Otter Point.....	30	Mrs. Gordon.....	360 00	Dec. 1, 1891	
5	Sooke.....	18	E. Milne.....	25% Com.	Apr. 1, 1907	
6	Victoria.....	18	(Wm. Dee (Gordon McKay	1,200 00 240 00	Dec. 1, 1907	
	Totals.....	118				
REPAIRERS SECTIONS.						
	Cape Beale-Banfield-Darling.....	9	C. E. Mansley.....	720 00		Allowance of \$7.50 horse hire when necessary to come to Victoria repairing line. During winter months only.
	Darling-Cleese.....	8	D. Logan.....	720 00		
	Cleese-Kowshelt.....	12	J. Murphy.....	720 00	Aug. 22, 1907	
	Kowshelt-Port Renfrew.....	14	J. Martin.....	720 00		
	Port Renfrew-Lost Creek.....	15	T. M. Baird.....	720 00	Oct. 1, 1908	
	Lost Creek-Jordan River.....	15	M. Hay.....	720 00		
	Jordan River-Otter Point.....	15	J. N. MacVicar, Acting Ins.....	720 00		
	Otter Point-Victoria.....	30	C. Gordon.....	720 00		
	Totals.....	118				

* Telephone connections for the convenience of several firms in the neighbourhood have been established at *Jordan River* for Messrs. Bell, Irving & Co., Point-no-Point; The B. C. Packers' Asso., Point-no-Point and Jordan River; Capital City Canning Co., French's Ranch; J. H. Todd & Co., Coal Creek; 5 connections. At *Otter Point* for Messrs. J. H. Todd & Son, The B. C. Packers' Asso., Capital City Canning Co. and the B. C. Meas.; one connection in common at Sooke Wharf. The charge for the telephone in each of the above instances is \$36 per year; the regular telegraph tolls being paid in addition.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Nanaimo-Comox.</i>	Miles.			\$ cts.		
1	Nanaimo	0	J. A. M. Oliver	Agt. and Opr.	900 00	Jan. 1, 1908.	The superintendence of this line is in the hands of Wm. Henderson, Esq., Victoria, B.C.
2	Wellington	5	W. Spencer	Messenger	240 00	May 5, 1908.	
3	Parksville	23	E. & N. Ry. Co.	Agt. and Opr.	Commiss ..	April 1, 1893	Parksville, Quillicum section.
4	Union Bay	324	J. J. G. McKay	Actg. Agent ..	480 00	June 1, 1903	
5	Union Mines		J. W. Mills	Lineman	600 00	Dec. 30, 1907.	Courtney and Comox communicate by telephone at prearranged intervals.
6	Cumberland	19	J. J. McNeil	Agt. and Opr.	720 00	Nov. 17, 1898.	
7	Courtney	7	J. Thos. Hudson	Accommodation	720 00		Wm. Henderson, Esq., superintendent, Victoria, B.C. NOTE.—The repairs of this line have been done conjointly with the Can. Pac. Telegraph since December 1, 1902.
8	Comox	73	J. McPhee & Son	Teleph. Agt.	25% com'n	Nov. 1, 1895	
	Totals	81	M. McDonald	Agt. and Opr.	5,040 00		
	<i>Parksville, Alberni and Cape Beale Line.</i>						
	Parksville	0	(See above).	Agt. and Opr.	240 00	Oct. 1, 1899.	Proportion of salary for Comox line included. Proportion of salary for this line.
1	Alberni	29½	Mrs. P. A. Haslam	" " "	240 00		
	Banfield Creek	53	Mrs. E. M. Scott	" " "	240 00		
2	Cape Beale	4	M. Patterson	" " "	240 00	May 1, 1900.	
	Totals	86½			720 00		

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	<i>Alberni-Clayoquot Line.</i>				\$ cts.		
1	Alberni.....	0	P. O. Haslam.....	Agt. and Opr.	180 00	Dec. 1, 1902...	Wm. Henderson, Esq., Supt., Victoria, B.C.
2	New Alberni.....	2	E. A. Waterhouse.....	" " "	25 % com.	Oct. 1, 1903...	Proportion for this line. Line crosses canal at this point by submarine cable.
3	Franklin Creek.....	8					
3	$\frac{1}{2}$ mile cable.....						
3	Uchucklest.....	10	F. Tyler.....	Agt. line-man.	660 00	.....	Section extends from Franklin Creek to Pipestem In- let; post office address, New Alberni.
4	Toquart.....	5	J. E. Hillier.....	" " "	780 00	Nov. 16, 1908	
5	Uchucklet.....	5 $\frac{1}{2}$	H. J. Hillier.....	" " "	720 00	Dec. 1, 1902	
6	Clayoquot.....	66 $\frac{1}{2}$	E. B. Garrard.....	" " "	720 00	Oct. 1, 1902	
	Stubbs Island.....			Accomm. Ofc.	.....	.....	Private cable connection for local firm.
		96 $\frac{3}{4}$			3,060 00		
	<i>Golden-Windermere Line.</i>						
1	Wilmer.....	0	Mrs. J. E. Brchant...	Agt. and Opr.	480 00	Oct. 1, 1908	Wm. Henderson, Esq., Supt., Victoria, B.C.
2	Athalmer.....	5	J. Lake.....	" " "	Commission.	" "	
3	Windermere.....	5	J. C. Pitts.....	" " "	" "	" "	
4	Spillimacheen.....	16		" " "	500 00	" "	
			J. A. Buckham.....	" " "	480 00	" "	
5	Golden.....	66	(G. E. Sanborn.....	Line repairer	1,080 00	" "	
				Golden to			
		92		Windermere	2,940 00	" "	

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA—Continued

Number.	Stations.	Inter- mediate Distance.	Agents, &c.	Positions.	Salaries per annum.	Date of Appointment.	Memo.
	<i>Vancouver-Salt Springs Line.</i>	Miles.					
1	Cable Landing to	9	E. Castley.....	Agt. and Opr.	25% commis.	July 1, 1905	
2	Duncan Station.....	3	T. Aicken.....	" "	" "	" 1, 1905	
3	Maple Bay.....	3	A. Chisholm.....	" "	" "	" 1, 1905	
4	Chisholms.....	3	Edwards & Co.....	" "	" "	Mar. 1, 1902	
5	Edwards Store.....	3	H. Ruckles.....	" "	" "		
6	Beaver Point.....	2	Bullman-Allison, L. Co.	" "	" "		
7	Cushion Cove.....	2	G. J. Movat & Co.....	" "	" "	July 1, 1905	
8	Ganges Harbour.....	4	L. S. Higgs.....	" "	" "		
9	South Pender.....		A. R. Spalding.....	" "	" "		
10	" " Wharf.....		W. Barckett.....	" "	" "		
11	Browning Harbour.....		J. Auchterlonie.....	" "	" "		
12	Hope Bay.....		A. A. Davidson.....	" "	" "		
13	Clam Bay.....		A. Deacon.....	" "	" "		
14	Village Bay.....		C. J. Macdonald.....	" "	" "		
15	Mayne Isd. Hotel.....		G. Georgeson.....	" "	" "		
16	Pt Comfort Lighthouse..		Burrill Bros.....	" "	" "		
	Galliano Island.....			" "	" "		

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE

YUKON LINES.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, which includes Port Simpson, Barkerville, Quesnelle and Lillooet branches corrected to date.

Number.	Stations.	Interm'diate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
1	Ashcroft.....		C. E. Gooding, manager.....	60 00		
			C. Belleau, operator.....	45 00		
			G. W. McKay, ".....	42 00		
			R. A. Gooding, lineman.....	75 00		
			R. P. Quain, clerk.....	83 37		
	Cache Creek.....	4	Accommodation office.....	50 p. c. com.	25 and 2	25 and 1
2	Bonaparte.....	34	" " ".....	" 25	" 2	25 " 1
3	Pavilion.....	36½	Mrs. Bryson.....	" 50	" 3	25 " 1
4	Lillooet.....	22	S. A. McFarlane, agt. & lineman.	60 00	50 " 3	25 " 1
5	Clinton.....	33	E. LeBourdais, opr. and lineman.	60 00	25 " 2	25 " 1
6	115 Mile House.....	55	Oscar Landry, " ".....	60 00	25 " 2	25 " 1
7	150 ".....	35	T. F. Murphy, " ".....	75 00	50 " 3	30 " 2
8	150 ".....		R. L. Murphy, " ".....	75 00		
9	Harpers Camp.....	33	A. J. Patenaud " ".....	60 00	50 " 3	30 " 2
10	Bullion.....	27	" " ".....			
11	Quesnelle Forks.....	4	Grant Grinder, opr. & lineman..	66 71	50 " 3	30 " 2
12	Soda Creek.....	28½	C. H. Smith, " ".....	60 00	50 " 3	30 " 2
13	Alexandria.....	21	J. A. Bowles, " ".....	60 00	50 " 3	30 " 2
14	Quesnelle.....	33	S. H. Parende, " ".....	75 00	50 " 3	30 " 2
15	Lafontaine.....	46	Cariboo Consolidated Co.....	50 p. c. com.	50 " 3	
16	Barkerville.....	15	D. M. LeBourdais, opr. & lineman	60 00	50 " 3	
17	Blackwater & Fraser Lake.....	42	G. Duclos, lineman.....	70 00		
18	Bobtail Lake.....	37	S. G. Lawrence, operator.....	75 00	75 " 5	
19	Nechaco.....	32	R. W. Smith, " ".....	75 00	75 " 5	
20	Fraser Lake.....	21	W. J. McAllan, lineman.....	70 00		
21	Burns Lake.....	55	W. J. Milne, operator.....	75 00	75 " 5	
22	South Bulkley.....	27	J. D. Charleson, lineman.....	70 00		
23	North Bulkley.....	52	G. W. Proctor, operator.....	75 00	75 " 5	
24	Aldermere.....		Harry LeDuke, lineman.....	70 00		
25	Morrice town.....	50	M. McKinley, operator.....	75 00		
26	Hazelton.....		G. Wallace, lineman.....	70 00	100 " 7	
27	Meanskinisht§.....	35	E. J. Burns, " ".....	70 00	100 " 7	
28	Skeena Canyon§.....	47	W. N. Clark, operator.....	75 00		
29	Lorne Creek§.....	24	E. Murphy, operator.....	75 00	125 " 10	
30	Kitselas.....		H. Fink, lineman.....	70 00	125 " 10	
31	Kitsumkalum.....		A. T. Carpenter, operator.....	75 00		
32	Hole-in-Wall.....		G. M. Swan, " ".....	100 00	125 " 10	
33	Graveyard Pt. §.....		E. R. Cox, " ".....	100 00		
34	Telegraph Point §.....	53	E. E. Charleson, line foreman.....	150 00		
35	Aberdeen§.....	4½	W. W. Wrathall, opr. & lineman.	75 00		
36	Port Simpson§.....	39	F. Charleson, lineman.....	70 00		
37	1st Cabin.....	27	K. O'Neil, operator.....	50 00	125 " 10	
			R. Tomlinson, lineman.....	75 00		
			J. W. Graham, operator.....	75 00		
			C. Durham, lineman.....	70 00		
			J. E. Wise, operator.....	75 00		
			C. E. Carpenter, lineman.....	70 00		
			S. W. Dobbie, operator.....	75 00		
			H. Daniels, lineman.....	70 00		
			P. Burnell, operator.....	75 00		
			W. Loiselle, " ".....	75 00		
			J. O'Regan, " ".....	75 00	150 " 10	
			F. D. Wilson, lineman.....	70 00		
			J. H. Waller, operator.....	75 00		
			J. Otero, lineman.....	70 00	150 " 10	
			H. N. Boss, operator.....	75 00		
			R. Donaldson, lineman.....	70 00		
			M. W. O'Neil, operator.....	50 00		
			Hugh Taylor, operator.....	70 00		

* Branch from Ashcroft. + 150 Mile House. † Quesnelle. § Hazelton.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—Continued to date.

—YUKON LINES.—*Continued.*

Number.	Stations.	Interm'diate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
37	2nd Cabin.....	22	T. J. Hughes, operator.....			
			W. R. S. Oag, lineman.....	70 00		
38	3rd Cabin.....	25	A. E. Falconer, operator.....	75 00		
			Leonard Mason, lineman.....	70 00		
39	4th Cabin.....	20	Douglas Potts, operator.....	75 00		
			H. P. Large, lineman.....	70 00		
40	5th Cabin.....	20	E. A. Hawley, operator.....	100 00		
			W. Ross, lineman.....	\$3 p. day		
41	6th Cabin.....	20	G. T. Brown, operator.....	100 00		
			G. Barrett, lineman.....	\$3 p. day		
42	7th Cabin.....	19	T. E. Hankin, operator.....	100 00		
			L. Dubois, lineman.....	\$3 p. day		
43	8th Cabin.....	19	G. Hill, operator.....	100 00		
			R. Todd, lineman.....	\$3 p. day		
44	9th Cabin.....	17	C. W. Smith, operator.....	100 00		
			C. Jepsen, lineman.....	\$3 p. day		
45	Echo Lake.....	32	J. Muir, operator.....	100 00		
			C. Vance, lineman.....	\$3 p. day		
46	25-Mile Cabin.....	25	E. Barrett, operator.....	100 00		
			Ernest Seeley, lineman.....	\$3 p. day		
47	Raspberry Creek.....		J. A. Thorne, operator.....	82 50		
			A. H. Webb, lineman.....	75 00		
48	Iskoot.....	16	F. N. Jackson, operator.....	100 00	175 and 10	
			F. Bullock-Webster, lineman.....	\$3 p. day		
49	Telegraph Creek.....	61	A. S. Gillespie, operator.....	160 00		
			W. S. Simpson, lineman.....	175 00		
			A. J. Charleson, line foreman.....	50 00		
50	Shesley.....	45	A. Johnson, operator.....	82 50		
				75 00		
51	Nahlin.....	61	S. G. Lawrence, operator.....	82 50	200 " 15	
			J. Pilling, lineman.....	75 00		
52	Nakina.....	49	Geo. Coutts, operator.....	82 50		
			J. Haston, lineman.....	75 00		
53	Pike River.....	40	R. J. Barton, lineman & operator.....	82 50		
54	Atlin.....	23	F. W. Dowling, circuit manager.....	116 66		
			A. B. Taylor.....	100 00		
			D. H. Gagné, line foreman.....	75 00		
55	Center Cabin.....	35	J. Stronach, operator.....	82 50	225 " 15	
56	Tagish.....	40	J. B. Watson, operator.....	82 50		
			A. Stanbridge, lineman.....	75 00		
				75 00		
57	Carcross.....	18	S. E. Chambers, operator.....	82 50		
58	Whitehorse.....	65		175 00	250 " 15	
			H. Gilchen, dist. supt.....	150 00		
			J. Hope, operator.....	115 00		
			W. Lafontaine, clerk.....	75 00		
			H. Kamayama, cook & housekpr.....	75 00		
			Wm. Watson, mess ngr.....	25 00		
				75 00		
59	Lower Leberge.....	50	Douglas Potts, operator.....	82 50		
60	Hootalinqua.....	30	R. T. McDonald, operator.....	82 50		
61	Big Salmon.....	34	H. O. Lokken, lineman.....	75 00		
			W. C. Fraser, operator.....	82 50		
62	Tantalus.....	30	R. Daoust, operator.....	82 50		
63	Five Fingers.....		R. O. Freeman, operator.....	82 50		
64	Yukon Crossing.....	8	Aubry Tennant, operator.....	82 50		
			M. Monson, lineman.....	75 00	275 " 15	
65	Fort Selkirk.....	50	Geo. A. McLachlan, operator.....	82 50		
			C. Harkness, lineman.....	75 00		
66	Selwyn.....	30	R. P. Hall, operator.....	82 50		
			A. Morrison, line foreman.....	75 00		
67	Stewart River.....	75	Gustin Aishi, operator.....	82 50		
68	Ogilvie.....	23	J. W. Wilkinson, operator.....	82 50	300 " 20	

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—*Con.*YUKON LINES—*Concluded to date.*

Number.	Stations.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				\$ cts.		
69	Dawson	48	W. Brownlow, manager	150 00		
			D. S. McKenzie, day operator...	125 00		
			.....	125 00		
			J. P. Champagne, cashier.....	125 00		
			A. S. Killam, messenger.....	\$3 p. day		
			.....	100 00		
			.....	80 00		
			C. A. Couture, line foreman....	125 00		
70	Forty Mile.....	55	W. H. Mullin, operator.....	82 50		
71	Boundary.....	40	.....		325 " 25	
	Prince Rupert.....		H. B. Rochester, operator	75 00		
			K. Smith, lineman	70 00		
	Vancouver.....		J. T. Phelan, acting supt.....	175 00		
			J. J. Healy, clerk.....	140 00		
			Emma Keays, stenographer.....	75 00		
	Total.....	2,252½	.....			

YUKON TARIFFS.

The rates given above for points north of Quesnelle are one-third less than those primarily adopted, which were calculated on the general basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

The local rates between offices north of Quesnelle are calculated on the basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, and the local rates between offices north of Atlin are fixed at 50 cents for each 100 miles.

Cable Messages.—On transatlantic business, the word rate is twice as much as the additional word rate given in the list for all points north of Ashcroft-Barkerville, $3 \times 2 = 6c.$; Dawson, $20 \times 2 = 40c.$ per word.

On transatlantic business the word rate is the additional word rate plus 4c.; Barkerville, $3 + 4 = 7c.$; Dawson, $20 + 4 = 24c.$ per word to or from Ashcroft.

Press Despatches.—For the Yukon line the rate is 1 cent per word, minimum charge, \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

Yukon system connects at boundary with U.S. Sig. Service Telegraph System.

9-10 EDWARD VII., A. 1910

GOVERNMENT TELEGRAPH LINES.

SPECIAL TARIFF.

Cable Messages.—Rates for cable messages passing over the Yukon line will be found in connection with the Yukon tariff in the preceding pages.

Elsewhere, the rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example:—

For a message of six words or less, the charge is 25 cents for government lines.

For a message of seven words the charge is (7x4) 28 cents for government lines.

For a message of twelve words the charge is (12x4) 48 cents for government line.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable tolls.

Press Despatches.—The rate for press despatches on the government lines (excepting the Yukon line), is 20 cents per 100 words; no single message less than 20 cents.

For the Yukon line the rate is 1 cent per word, minimum charge \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

REGULAR TARIFF.

NOVA SCOTIA.

Line from North Sydney to Meat Cove and Mabou—Local rate, 25-1 (20 offices).*

Big Bras d'Or. Through rate 15-1 from North Sydney, W.U. office.
New Campbellton's (Kelly's

Cove)	"	"	"
Englishtown.	"	"	"
Baddeck.	"	"	"
Murray.	"	"	"
Indian Brook.	"	"	"
French River.	"	"	"
South Ingonish.	"	"	"
Ingonish.	"	"	"
Neils Harbour.	"	"	"
Dingwall.	"	"	"
Aspy Bay.	"	"	"
Meat Cove.	"	"	"
Pleasant Bay.	"	"	"
Cheticamp.	"	"	"
Grand Etang.	"	"	"
Northeast Margaree.	"	"	"
Margaree Harbour.	"	"	"
Southwest Margaree.	"	"	"
Inverness Town (Broad Cove).	"	"	"

Night messages are exchanged with the Western Union Telegraph Company for offices on this line. Rate, 1 cent per word with minimum of 15 cents. The local night rate is 1 cent per word with minimum of 25 cents.

* When the tariff rate is entered as 25-1 or 50-2 &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

SESSIONAL PAPER No. 19

Line from Barrington to Cape Sable—Local rate, 12-1.

Newellton. Through rate 12-1 from Barrington, W. U. office.
 Cape Sable Lighthouse. " " " "

This line is now operated by the local telephone company. Terms of lease provide for former telegraph rate as above not being exceeded.

NEW BRUNSWICK.

Line from Chatham to Point Escuminac—Local rate 25-1 (4 offices).

Bay du Vin. Through rate 15-1 from Chatham, G. N. W. office.
 Lower Hardwicke. " " "
 Escuminac. " " "
 Pt. Escuminac Lt. House. " " "

Line from Eastport, Me., to Campobello, Grand Manan, and Whitehead Islands (9 offices)—Local rates between offices on Grand Manan and Whitehead Islands, 15-1; Grand Manan and Campobello Island, 25-2; The Islands and Eastport, Me., 25-2, W. U. O.

Welshpool, Campobello. Through rate 25-2 from Eastport, Me., W. U. office.
 Flaggs Cove, Grand Manan. " " "
 Castalia. " " "
 Woodward's Cove. " " "
 Grand Harbour. " " "
 Seal Cove. " " "
 Southern Head. " " "
 Cheneys Head. " " "
 Whitehead Islands. " " "

QUEBEC.

Line from Gaspé to Anticosti Island, Q. (9 offices)—Local rates between offices on the Island, 25-1; Gaspé and the Island offices, 50-2.

Southwest Point. Through rate 50-2 from Gaspé, G. N. W. office.
 Salt Lake. " " "
 Shallop Creek. " " "
 South Point. " " "
 Heath Point. " " "
 Fox Bay. " " "
 Beccie River. " " "
 West Point. " " "
 English Bay. " " "

Line from Meat Cove, C.B., N.S., to Magdalen Islands, Q. (9 offices)—Local rates between offices on the Islands, 25-1; Meat Cove and the Islands, 50-2; offices on the Meat Cove line and the Islands, 50-2.

Amherst Island. Through rate 50-2 from North Sydney, W. U. office.
 Amherst Lt. House. " " "
 Etang du Nord Village. " " "
 Etang du Nord Lt. House. " " "
 Cap aux Meules (Grindstone). " " "
 House Harbeur. " " "
 Gresse Isle. " " "
 Grand Entry. " " "
 South Beach. " " "
 Bryen Island. " " "

9-10 EDWARD VII., A. 1910

Line from Meat Cove, C.B., N.S., to St. Pauls Island—Local rate between offices on Meat Cove line and St. Pauls, 50-2 (1 office).

St. Pauls Island Lt. House, 50-2 from North Sydney, N.S., W.U. office.

Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates between offices on Orleans Island and Isle Réaux, 15-1; on Orleans Island, Isle Réaux and Quebec, 15-1; on Orleans Island and Grosse Isle, 25-1; on Isle Réaux and Grosse Isle, 15-1.

St. Pierre, Orleans Island.. . . .	Through rate 15-1 from Quebec, G. N. W. office.		
Ste. Pétronille.... .	"	"	"
St. Laurent.. . . .	"	"	"
St. Jean.. . . .	"	"	"
St. Famille... . .	"	"	"
St. François.. . . .	"	"	"
Isle Réaux.. . . .	"	"	"
Grosse Isle.. . . .	" 25-1	"	"

Lines in Chicoutimi District, including points west of Bersimis.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1. Between offices on government line and offices on the G. N. W. Company's line as far as and including Quebec, 25-2. Through rate is the above-mentioned local rate between government line offices to connect with the G. N. W. Tel., plus the full charge of the G. N. W. Tel. Co., for points beyond Quebec.

Line from Bersimis to Chateau Bay, with branch to Anticosti from Long Point of Mingan.—Local rate between offices within 100 miles apart, 15-1; over 100 miles, 25-1; on mainland and Anticosti, 50-2. These same rates apply to government line offices east and west of Bersimis.

The checking of all through business exchanged with the G. N. W. Tel. Co. is done with Quebec.

ONTARIO.

Line from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee, 15-1; mainland and Island offices, 25-1; offices on the island, 15-1 (8 offices).

Gun Club House, mainland.. .	15-1 (through business) from Leamington, G.N.W.		
Point Pelee, mainland... .	"	"	"
Leamington Dock.. . . .	"	"	"
Bairds.. . . .	"	"	"
North Pt. Lt. House, Pelee Id.	"	"	"
North Dock, Pelee Island... .	"	"	"
McIntyre's Corners... . .	"	"	"
West Dock, Pelee Island.. . .	"	"	"
South Dock.. . . .	"	"	"

NORTHWEST TERRITORIES.

Line from Qu'Appelle (C.P.R. Sta.) to Edmonton, Alberta—Local rates, 15-1, 25-2, 35-3 distances 10 to 600 miles (13 offices).

Fort Qu'Appelle.. . . .	25-2 Qu'Appelle or Saskatoon.		
Touchwood.. . . .	"	"	
Saskatoon	"	"	
Saskatoon (T's office C.P.R. Tel.)..	"	"	
Henrietta.. . . .	"	"	
Battleford	"	"	"

SESSIONAL PAPER No. 19

Bresaylor	25-2	Saskatoon;	35-3	Qu'Appelle or Edmonton.
Onion Lake		"	"	"
Moose		"	"	"
St. Paul de Mëtis	35-3	Saskatoon,		Qu'Appelle or Edmonton.
Saddle Lake		"	"	"
Victoria	25-2	Edmonton;	35-3	Qu'Appelle or Saskatoon.
Andrew		"	"	"
Star		"	"	"
Fort Saskatchewan		"	"	"
Edmonton ((Transfer office, C.P.R.				
Tel.)		"	"	"
Athabasca Landing		"	"	"

Line from Moosejaw (C.P. Stn.) to Wood Mountain—Local rates, 25-2 (1 office).

Wood Mountain 25-2 from Moosejaw.

BRITISH COLUMBIA.

Line from Victoria to Cape Beale—Local rate, 25-2 (6 offices).

Sooke	25-2	from Victoria, C. P. R. Tel. office.
Otter Point	"	"
Jordan River	"	"
Port San Juan	"	"
Carmanah Lt. House	"	"
Cape Beale	"	"

Line from Nanaimo to Comox—Local rate, 25-2 (9 offices).

Wellington (C.P.R. and E. & N. Ry.)	25-2	from Nanaimo.
Parksville	"	or Wellington.
Fanny Bay	"	"
Cumberland	"	"
Union Bay	"	"
Union Mines	"	"
Courtney	"	"
Comox	"	"
Alberni (branch)	"	"

Line from Alberni to Cape Beale—Local rate, 25-2.

Between offices on the Victoria-Cape Beale line and the Nanaimo-Comox line, via Alberni, 25-2.

Line from Golden to Windermere—Local rate, 25-2 (3 offices).

1. Athalmer	25-2	from Golden (C. P. R.).
2. Wilmer	"	"
3. Windermere	"	"

Line from Kamloops to Lower Nicola (Telephone) (16 offices).

Connections are leased and lessees allowed commission on messages of non-subscribers. Tariff, 25-2 local from Kamloops, and for conversations, 25 cents for five minutes, half that rate for each additional five minutes or fraction thereof.

9-10 EDWARD VII., A. 1910

Yukon System.

Tariff rates for the Yukon lines are given in the table of staff, &c., in the foregoing pages.

SUMMARY.

Offices on government line, as listed..	401
Offices at transfer points with connecting lines..	16
Total number embraced by the service..	417

APPENDICES

GOVERNMENT TELEGRAPH SERVICE

ANNUAL REPORT FOR 1908-9.

- Sectional reference (1) Cape Breton lines.
(2) Bay of Fundy lines.
(3) Magdalen Islands.
(4) Anticosti Island lines.
(5) North Shore, St. Lawrence and Chicoutimi.
(6) Quarantine Telegraph system.
(7) Pelee Island system.
(8) Northwest lines.
(9) " (Inspector).
(10) British Columbia lines.
(11) Kamloops-Penticton lines.
(12) Yukon telegraphs.
(13) Cable ship *Tyrian*.

REPORT No. 1.

ST. JOHN, N.B., June 4, 1909.

D. H. KEELEY, Esq.,
General Superintendent, Government Telegraph Service,
Ottawa.

DEAR SIR,—I beg leave to submit the following report on the government telegraph lines in Cape Breton for the year ending March 31, 1909.

	Miles in Operation.	Number of Offices.	Number of Operators.	Number of Repairers and Linemen.
At date of last report.....	609 $\frac{1}{4}$	66	66	27
Added during the year.....	17	3	3	.....
At date of this report.....	626 $\frac{1}{4}$	69	69	27

The additional mileage covers the new line from Castle Bay to Grand Narrows, 16 miles, completed December 10; and an extension of one mile to connect with new landings of the Mainadieu-Scattarie Island cable.

Poles were also got for the proposed extension from Enon to Victoria bridge, of which 360 have been set, but on account of the severity of the weather the balance of the work was deferred until the coming summer.

New offices were opened at the under-mentioned places, viz.:—

Enon, C.B., with Miss Effie McDonald agent, salary \$50 per annum, April 1, 1908.

Wreck Cove, C.B., with Miss Mary Morrison agent and operator, salary \$50 per annum, October 6, 1908.

Margaree Forks, C.B., with Miss Sarah McDougall agent, salary \$50 per annum, December 10, 1908.

Miss Flora Jamieson, agent at Inverness, C.B., salary, this line receipts and 50 per cent of checks, resigned July 15, and Miss Annie Smith was appointed, salary 50 per cent this line receipts and checks.

On September 30 this office was removed from the private dwelling of Miss Smith to the new government building.

Miss Mary Dickson, agent at Mainadieu, resigned August 31, and was succeeded by Miss Hattie Dickson at the same salary, viz., \$50 per annum.

Ambrose Smith, of Port Hood Island, was appointed repairer, covering section from Port Hood office to the furthest office on Outer or Henry Island, salary \$20 per annum, including horse hire and expenses.

Salary of J. G. Chaisson, repairer of the Cheticamp-Barren section, was increased from \$40 to \$50 per annum March 1, 1909.

Cable connections with the Magdalens and St. Pauls Island have been maintained during the year.

9-10 EDWARD VII., A. 1910

The poles upon the Hawkesbury-Grand River section were carefully gone over by general repairer Bissett and a large proportion reset. This work should be continued on the sections from Grand River to Gabarus, and from Grand River to Enon before another winter.

Between North Sydney and Scattarie some 250 new poles were set and a large number of old ones reset, which placed this section in very fair order. The cable between Mainadiou and Scattarie Island was moved to a more suitable location and the land lines extended to the new landing places.

The Meat Cove and Boularderie wires, within the limits of the town of North Sydney, were transferred to new cedar poles erected by the Eastern Telephone Company under an arrangement with the company, and it is proposed to extend this arrangement as far as Little Bras d'Or during the coming season.

Yours faithfully,

R. C. DAWSON,
Superintendent.

REPORT No. 2.

GRAND MANAN, N.B., April 21, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,
Ottawa, Ont.

DEAR SIR,—I beg to submit the following report on the lines in the Bay of Fundy district for the year, from March 31, 1908, to March 31, 1909.

During the month of April we had considerable trouble with the telephone company's wires, partly caused by the company removing one of our poles and neglecting to replace it, as they had arranged to do. Since then we have had very little trouble with their wires except after very severe storms.

The line at Southwest Head has given considerable trouble this year, owing to the unusually severe and numerous thunder storms. Have found it necessary to repair the telephones several times, but it is now working very well.

On August 27, the cable between Eastport and Campobello gave out. The ss. *Tyrian* arrived on September 7 to make the repairs. They found the cable broken near the Eastport landing. Finished repairs on September 9.

While here Mr. McDonald inspected the lines in the district and recommended that a new line be built at Campobello. That the line at Whitehead be moved to the roadside and the ground wire carried from the office to the cable; and that the line at Southwest Head be extended from Mrs. Fraser's, at Seal Cove, to Capt. Ingersoll's store, for the convenience of the lightkeeper, and four new telephones be put in as soon as the weather permitted. I sent our lineman to Whitehead and rebuilt the line as directed; also doing some necessary work on Cheney's island. I found the cable on Ross island had washed out and was exposed for some distance, so had Mr. Russell, of Cheney's island, bury it as deep as it could be done.

Was unable to get the cedar poles for the Campobello line at that place, but have arranged to have them landed there as soon as the weather permits, when the work there will be taken in hand.

The extra work on South Head line has not been done, as I have waited authority of the department regarding telephones. Will have the work done as early as possible, if I can get the telephones. The expense of extending the line will not amount to much, as we have the material on hand.

SESSIONAL PAPER No. 19

The line from Flaggs Cove office to Long Eddy cable landing needs a general repair, the wire being old and some of the poles thrown out by frost. This will be done as soon as the frost is out.

The lines have all given good satisfaction during the year, and the offices well looked after.

Yours faithfully,

C. C. SEELY,
District Superintendent.

REPORT No. 3.

GRINDSTONE, M.I., June 8, 1909.

D. H. KEELEY, Esq.,
Ottawa.

DEAR SIR,—In continuation to my annual report from September 21, to March 31, the following works and alterations have been done, viz.: A house building, 17 by 19, for the purpose of storing supplies was completed. The winter tariff of $\frac{1}{2}$ cent a word was reopened on the closing of navigation, December 22, lasting till the arrival of our first mail steamer, May 10. This special rate during our mail steamer interruption and all other interrupted communication affords a great opportunity to the whole public here who take advantage of this benefit to correspond to a large extent with their mainland friends. The Grindstone office was not in operation all last winter, on account of Mr. Leslie's absence to the mainland. The Etang du Nord lighthouse telegraph station has no competent attendant since years past, would suggest a telephone which would correspond a great deal better and would incur no further expenses but the telephone sets.

There has been landed here lately 99 posts. I will have Mr. Binet, the repairer, start the work for the opening of an office at Cape Vert (Barachois), at Mr. Gregoire Cyr's, and follow instructions of last year.

There is no other change or no further particulars concerning my district. Hoping you will have all the satisfactory information by this report,

I am, yours faithfully,

A. LEBOURDAIS,
District Superintendent.

9-10 EDWARD VII., A. 1910

REPORT No. 4.

WEST POINT OF ANTICOSTI,

April 30, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service,
Ottawa, Ont.

DEAR MR. KEELEY,—I beg leave to submit my Annual Report on Government Telegraph Service under my charge for the year ending March 31, 1909, as requested by your letter of the 6th instant.

We have 230 miles of line in operation and I can only repeat myself by saying that owing to the hard and dangerous travelling the cost of keeping the line in good condition is comparatively high.

The arrangement made by Mr. A. Gobeil former Deputy Minister with Mr. Menier's guards came to an end last October as I had the honour to advise your department before. This left me without a single local repairer on the entire length of line. After serious consideration I decided to temporarily engage Horatio Malouin as second general repairer at same salary and subject to same duties as our first general repairer Bourget. All subject to your approval. The department was notified of this arrangement as soon as made, and I hope it has been approved. Since I was not notified of the contrary, the appointment took place on January 1.

Since then (January 1) we had a few interruptions but of no importance, being only a short distance from here. On the whole our line is in good condition, but there will be a good bit of repairs to be done at the east end, where a gale carried many poles and one bridge. I would beg to suggest that two men be added to the general repairer when going on the general repairs so as to make the line A-1 throughout. As you know the east end is very mountainous and rough, two men could not handle the work properly. I am sorry to say that the shore end of the Gaspé cable was badly smashed by the ice this spring. The light keeper, Mr. Lemieux did his utmost to repair it, and so far succeeded that business can be passed on that cable, but a few piece of shore cable is needed, say about 60 feet.

Since the 24th instant the North Shore cable seems to have come to grief also. We have been unable to raise Long Point since that date. Repairer reports land line and cable O.K. as far as he could see.

Maintenance of the line during the past twelve months, viz.—from April 1, 1908, to March 31, 1909, amounts to \$1,046.17, but this comprises all amounts I have had to pay except salaries.

Please permit me to refer you to my last report, dated September 20, 1908, in reference to the change of the spruce telegraph poles, also to the suggestion of appointing two general repairers, made on several occasions, which would somewhat justify the appointment made this winter when nothing better, and I may say, nothing else could be done.

I have the honour to be, sir,

Your obedient servant,

ALF. MALOUIN,

District Superintendent.

SESSIONAL PAPER No. 19

REPORT No. 5.

CHICOUTIMI, May 11, 1909.

D. H. KEELEY, Esq.,
General Superintendent of Telegraph,
Public Works Department, Ottawa.

DEAR SIR,—As per your request, I beg to submit herewith my annual report on government telegraph service under my charge for the year ending March 31, 1909, comprising the lines in Chicoutimi, Saguenay and Charlevoix counties.

MAINTENANCE.

As stated in my last report, the office at Chicoutimi is located in the public building.

Office.	Staff.	Salary.
		\$ cts.
Superintendent.....	J. C. Taché.....	300 00
Inspector and Instructor.....	Art. Simard.....	564 00
Operator.....	J. D. Villeneuve.....	660 00
".....	T. Villeneuve.....	480 00
Clerk.....	J. A. Conet.....	180 00
Messenger.....	A. Gagné.....	120 00
Repairer.....	J. Fortin.....	420 00

Operator Jos. Lapointe resigned on April 30, 1908.

Line No. 13, from Quebec to Labrador. The service on this line is interrupted since January 14, on account of the cable between Ste. Catherine and Tadousac being broken. The service is done from Quebec to Chicoutimi, passing by Baie St. Paul, and then on the north shore of the Saguenay river, and on the north shore as far as Bersimis. When the line is in a very good condition we connect Quebec with Bersimis, but when the line is working bad Chicoutimi is obliged to repeat the whole business. I take advantage of this report to draw your attention to this part of the line between St. Fulgence and Sacré Cœur. This line wants repairing for it is the only line we can depend on when the cable is out of order.

Lines 13 and 21, line No. 21, double line from Malbaie to Ste. Catherine, 38 miles. This line was put in good order last fall, posts were replaced, trees were cut, guides put on where necessary, the repairers Brassard & Boulianne having done good jobs.

Line No. 40, from Baie St. Paul to Chicoutimi, distance 85 miles. This line is in a good condition.

Line No. 39, from Ste. Catherine to Chicoutimi. This line is working well.

Line No. 41, from Malbaie to Ste. Agnes, working well.

Line No. 44, from Baie St. Paul to Petite Rivière St. François Xavier, good condition.

Line No. 45, from Ste. Anne to Lac Clair, in good condition.

Line No. 42, the line from Chicoutimi to St. Charles Borromée, 18 miles, with two loop lines, Shipshaw North, 2 miles, and St. Ambroise, 4 miles, was extended as far as Peribonka. This line is in good order.

The offices are distributed as follows:—

From St. Charles Borromée to Taché, 7 miles.

9-10 EDWARD VII., A. 1910

From Taché to intersection of the road of St. Joseph d'Alma village, a loop line, 3 miles.

From intersection of road to St. Cœur de Marie, 5 miles.

From St. Cœur de Marie to Rivière à la Pipe, 6½ miles.

From Rivière à La Pipe to Honfleur, 8 miles. An office was opened there in charge of Mr. Charles Lindsay.

From Honfleur to Péribonka, distance 9 miles. Making a total length of 51½ miles. An office was opened at Peribonka in charge of Mr. Edouard Niquette, with the usual salary of \$50 a year, same for Mr. Lindsay.

The cost of this extension was \$1,720.61.

On line No. 13, from Quebec to Labrador, very important repairs were made by repairer Courbon. He reports that 46 miles of line were repaired. He has cleared a right of way ten feet wide, two bridges were repaired, one 130 feet long, and the other 63, the flooring was replaced, four other small bridges were also repaired, 60 posts were replaced. The three camps were also repaired and were well supplied with the necessary fuel to heat them during the winter.

In general the condition of the line is good.

CONSTRUCTION.

At the last session of parliament a sum of \$1,500 was voted towards the construction of a telegraph line from Baie St. Paul to St. Placide, in Charlevoix county, distance 8½ miles.

Work on this construction was started on September 30, and on November 11, 1908, I received instruction to discontinue work. This spring the line was completed and an office will be opened.

Cost of construction, \$771.24.

GENERAL REPAIRS AND GENERAL EXPENSES.

The shelter hut between St. Félix d'Otis and L'Anse St. Jean was completed, and a stable was constructed, cost \$208.46.

Cost of repairs between Tadousac, Ste. Catherine and Murray, and on the Portneuf-Bersimis section, \$1,636.20.

Repairs between Tadousac and Bergeronnes, \$76.

Paid P. A. Guay, of Chicoutimi, for repairing instruments, \$38.

For telephone services, \$35.

Material from Watson, Jack & Company, \$150.92.

Material from Mechanic Supply Company of Quebec, \$166.75.

Oilcloth for Chicoutimi office, \$19.20.

Sundries, \$203.42.

Installation of heating apparatus at Bersimis telegraph office, done by contract, Mr. Philippe Guay, of Chicoutimi, cost, \$1,033.70.

Other accounts in connection with the said building, \$116.95.

SESSIONAL PAPER No. 19

COST OF MAINTENANCE OF OFFICES.

April, 1908..	\$ 791 98
May, 1908	803 95
June, 1908..	768 86
July, 1908..	837 85
August, 1908..	840 53
September, 1908..	836 19
October, 1908..	834 58
November, 1908..	772 54
December, 1908..	739 44
January, 1909..	807 63
February, 1909	814 66
March, 1909..	781 67
Making a total of..	\$9,629 88
Including the other amounts mentioned above.. . . .	6,176 45
Making a grand total of..	\$15,806 33

In conclusion, I draw your attention to the fact that the telephone lines on the government posts, are most of the time the cause of trouble on our telegraph lines, and something ought to be done to improve these conditions.

Hoping that you will find this report satisfactory,

I have the honour to be, sir,

Your obedient servant,

J. C. TACHE.

District Superintendent.

REPORT No. 4

ST. JEAN, ISLE D'ORLEANS, April 12, 1909

D. H. KEELEY, Esq.,

General Superintendent,

Government Telegraph Service,

Ottawa, Ont.

DEAR SIR,—I have the honour to submit my annual report upon the operation of the telegraph and telephone lines of the quarantine division of Grosse Ile, &c., under my charge for the year ending March 31, 1909.

With the exception of the cables connecting St. François, I.O., to Grosse Ile, all the telegraph and telephone cables, in my division were broken by the ice during the winter of 1908-9.

The telegraph cable between Ange Gardien and St. Pierre, I.O., was interrupted on May 11, 1908, and communication was temporarily re-established on the 12th of the same month.

The two telephone cables, at this place, being also broken I repaired them the same day.

The cables which were definitely repaired in the month of June required an addition of 150 feet to each, and they were solidly fixed in their respective places.

9-10 EDWARD VII., A. 1910

The two cables from Ile aux Grues to Grosse Ile and to Montmagny were broken in December, 1907. The repairs were finished in July, 1908, requiring one mile of cable for that of Montmagny, this length being lost and impossible to find. About 300 feet were added to the cable from the north shore to Ile aux Grues. The cables were solidly fixed in deep trenches in November, 1908. The cable from Les Eboulements to Ile aux Coudres was broken in January, 1908. We used about 150 feet of cable for its repair which was done in June, 1908; this cable was again broken October 16 by the steamer *Rouville*; it was repaired on the 24th of the same month. We had to add about 150 feet of new cable.

The telephone line and the instruments on Ile aux Coudres were in very bad condition, and by special instructions, I made the necessary repairs in July, 1908, after which the line gave better satisfaction. The instruments on this circuit are of inferior quality, and having been in use a long time should be renewed. After all the above repairs were made the lines in my division gave excellent service.

On September 21, 1908, I sank a new cable, received from Halifax, between Ange-Gardien and St. Pierre, I.O., to take the place of one of the telephone cables which was in bad condition, and the one taken out was used to repair the remaining one. They were placed in security in the shoals. The work was completed on October 13, 1908. In October, 1908, three new telephones were installed on the circuit from Grosse-Ile to Montmagny, one at Doctor Martineau's, one at Miss Lagacé (telegraph office) and one at Mr. N. Lachaine (telegraph office), Ile aux Grues; these were connected with the Quebec line of the Bell Company via Montmagny. This line was not giving a satisfactory service during the night on account of the induction of electric light and wireless telegraph on Grosse Ile. I placed a second wire (metallic circuit) on Grosse Ile with a transformer at each end—one at Dr. Martineau's and one at the terminus of the cable at Ile aux Grues, on the eastern wharf of Grosse Ile. After, the service was very good until December 10 when the Montmagny cable was broken by the ice.

The circuit is alternative from Grosse Ile to Ile aux Grues, and either the telephone or telegraph may be used by means of switches which I placed at Miss Lagacé's and at Mr. N. Lachaine's.

As in the past years the land lines required considerable repairs. Twenty posts fell at St. Laurent and Ste. Petronille during the year 1908-9, and they were replaced with all possible haste.

The lines under my charge have given a fairly good service during the year. I remarked that the offices are better kept, and the agents are prompt to put into practice the instructions given them.

The details concerning the length of the lines, names of agents, salaries, &c., are absolutely the same as last year and you will find them in my report for 1907-8.

For reasons given in my precedent report, I beg to insist again for the acquisition of a suitable tug for the service of the telegraphic cables and lines under my charge.

The repairs of the cables and lines in my division during the year were as follows:—

Repairs to cables.	\$2,780 14
Repairs to the land lines.	850 00

Total expended on repairs, 1908-9.	3,630 16
Salaries of agents and operators, 1908-9.	\$ 828 42

I have the honour to be, sir,

Your obedient servant,

J. P. POULIOT.

District Superintendent.

SESSIONAL PAPER No. 19

REPORT No. 7.

LEAMINGTON, ONT., April 30, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraph Service.
Ottawa, Ont.

DEAR SIR.—In the matter of the Pelee Island telephone system for the term from March 31, 1908, to March 31, 1909, I beg to report as follows:—

1. The line on the island is in good order and repair with the exception of a short space near the north end lighthouse where we were obliged to use some trees as temporary poles owing to the washing out of several poles there during some of the heavy storms we had during the season. There is some dredging and dyking being done a short distance to the east of this portion which when completed would give a good location for poles on the dyke bank beyond the action of the waves during storms. In June I installed an instrument at A. Ouellette's grocery at the north end of the island about two miles west of north dock office. I have on hand three additional instruments authorized by the department to be placed as soon as possible at the following places, viz.: Dr. Pirettes residence, Dr. Van Epps residence, and the hotel, all on the west side of the island near the west dock. (These three instruments were placed on April 8 and 9, 1909).

2. The line on the mainland is in good working order, but several of the old poles will require to be replaced during this coming season. There are sufficient good cedar poles on hand for this purpose, but we will require a supply of side blocks. During the past season we were obliged to shift the location of the line from Leamington office to the cable landing near the Leamington dock so as to avoid trouble from induction of electric railway and electric light wires and as the old poles on that part of the line were too light and too much decayed we put up new poles with six pin cross arms from Leamington office to the cable landing and split the lines, placing the line to Pelee Island and Point Pelee branch from Leamington office on separate lines and making the line to the island metallic as far as the cable landing and the line to Point Pelee metallic from Leamington office and with new poles from the cable landing to Baird's office thereby considerably improving the service. In doing this work we were obliged to lengthen the line to avoid difficulties and trouble as much as possible so that the line from Leamington office to the cable landing is now about $2\frac{1}{2}$ miles in length. For part of the distance, about 276 rods, Mr. James Bradford is to receive a rental of \$10 per year for the privilege of setting poles on one of his lines and driving along the line to inspect or repair when necessary.

3. As stated in my last report the cable was badly damaged by the ice packing and shoving during some heavy gales in the early part of February, 1908. We found when repairing in May and June last that all the damage was done in the deepest water. There were three complete breaks, the first being in the channel and the other two about two and four miles respectively north of the channel. The ice had reached down and dragged the cable in different directions according to the winds prevailing at the time so that we experienced considerable difficulty with some portions which were badly tangled up and there was one short piece which we could not find and were obliged to use part of the $\frac{1}{2}$ knot shipped to us for that purpose by the department before we began the work of repair; we also had considerable rough weather while repairing that greatly hindered us in the work.

The cable has worked well since then and during the winter is now in good order and working satisfactorily.

9-10 EDWARD VII., A. 1910

I herewith inclose list of officers or stations, operators or agents and rates of commission or salary with a summary of messages sent and received from March 31, 1908, to March 31, 1909.

Yours respectfully,

(Sgd.) JOHN McR. SELKIRK.
District Superintendent.

REPORT No. 8.

Qu'APPELLE, SASK., April 13, 1909.

D. H. KEELEY, Esq.,
Government Superintendent, Government Telegraph Service,
Ottawa.

DEAR SIR,—I beg to submit herewith a report of the conditions of the Northwest lines to March 31, 1909, in continuance of last year's report.

I have not made a trip of inspection this spring, as I felt I could do so to much better advantage later on in the summer, when I could better determine the conditions prevailing and see more clearly what is required to put the line in good order. Prairie fires in the spring and summer, but more particularly in the spring, usually cause considerable damage, and it is too early in the year for these. The lines as a whole have been working very satisfactorily during the entire year and delays on business were very infrequent. What is known as the Lloydminster loop has given us the most trouble to keep in working order. As the country is being settled, which it is rapidly, many portions of our line, along its entire length, is being fenced in and where requests have been made to remove it, from the fields to the road allowance we have done so. I expect there will be a good amount of this work to be attended to the coming summer. There are also parts of our line where some of the poles are very old and rotten and will of necessity be renewed this season.

CONSTRUCTION AND REPAIRS.

A new office—dwelling building—was erected by the department at Fort Qu'Appelle during the year. This building is on the site of the old office, owned by the department. It is centrally located, is well built and comfortable. The property was also neatly fenced.

Battleford building was painted during the year, a fence built around the property; a porch erected and a part of the foundation which had broken was rebuilt.

South Humboldt buildings were painted and a fence built. This adds greatly to the appearance of the property, and the painting is a great protection to the buildings from the weather and will add to their permanency.

My last report showed the line in very bad condition for a stretch of 18 miles immediately east of Battleford. Lineman Dewan with a gang of men put in 24 days work on this section during last July, straightening it in some few places and putting in many new poles and resetting others.

In the town of Battleford we changed the entire line extending for a mile on either side of the office. We removed it from the main streets placing it in the lanes, putting in a superior class of poles to conform with the electric light and telephone poles now in use in that town. This was requested by the town council.

SESSIONAL PAPER No. 19

The Lloydminster loop, 24 miles east of Pitt, has been a very difficult piece of line to keep in working order. Last year there was an appropriation made to have the loop rebuilt. The work was carried on until the weather got too severe. The loop was practically constructed except for the stringing of the wire. We hope with the completion of the new loop to avoid many interruptions which now take place owing to the old line having been built with poplar poles some six years ago, which are now very rotten. This line has been kept in as good repair as possible by Sub-Agent Mann, of Moose, who has been making periodical trips over it. Mr. Mann being located so far from this portion of the line, I have found it necessary on several occasions to send a man out from Lloydminster to make temporary repairs. There being no road along this route, travel was necessarily bad and slow. The new loop will follow the travelled roadway and will be easy of access should repairs be necessary.

We have also during the year put in a new and better class of poles in the town of Lloydminster similar in size to those used by the telephone service, at the request of the Lloydminster town council.

At Edmonton a number of changes were asked for by the city council. We received permission from the city telephone service to use their poles for stringing our wires on within the city limits, providing we would use a twin copper wire so as to take up as little amount of pole space as possible. This we did, thus coming within the regulations and meeting with their wishes in every respect. The total distance made new is about $2\frac{1}{2}$ miles in length. These changes were suggested by the general inspector on his trip of inspection last year.

We have also put a set of telegraph instruments into the Griffin packing plant, which is located four miles out from our Edmonton office on the Athabaska Landing line. These are operated by a clerk in their office at their own expense, and all messages are checked in our Edmonton office. We get some business from them for our own line, but the bulk of it is for the Canadian Pacific Company, on which they pay us a small toll. The amount of business is fairly large. This office was cut in on January 1 last, and for the three months ending March 31, the Canadian Pacific Company¹ have paid us \$50.15 in tolls; while it does not overwork our agent.

An office was opened at Halfway Lake, a point about midway between Edmonton and Athabaska Landing, Miss C. Egge, agent. This office, though there is not much business done there, is considered a boon to the settlers in that district and to travellers generally, as the distance between Edmonton and Athabaska Landing is 100 miles, with no other office between these points. It is also a great convenience as a testing station. This office is operated on a commission basis.

An appropriation for the extension of our line from Athabaska Landing, 70 miles northward toward Peace river was made last year. Owing to the lateness of the season in getting this work started, we were unable to complete it. However we have the poles and material on the ground, 16 miles of holes dug and most of the right of way cleared, so that as soon as spring opens up we will be able to construct and complete the line in a short time. This line as it is continued northward will be of great value to the many settlers who have taken up their homes in the north country. Hundreds of people are going into this northern district every year.

REQUIREMENTS FOR 1909-10.

Fort Qu'Appelle—Kutawa Section—About 100 poles will be required for this section and should be erected during the summer, as a number of those now doing duty are old and rotten and past use for resetting.

Kutawa—South Humboldt—will require considerable work this season for which we have sufficient poles at South Humboldt station.

9-10 EDWARD VII., A. 1910

South Humboldt—Saskatoon Section.—We will require about 200 poles for this section to put it in good repair.

Onion Lake—Moose section—will need about 100 poles.

St. Paul des Metis—Saddle Lake.—Pakan section—will require to have a considerable number of poles reset and about 200 new poles put in place to put it in good condition.

MOOSEJAW—WOOD MOUNTAIN DIVISION.

This section has been kept in fair working order. Several short interruptions have taken place during the winter. There was an appropriation made last year for general repairs on this line; but owing to the poles that were ordered being late in arriving, we were not able to do any work on the line further than to have some of the poles hauled out to points on the line that would be handy for the repairer and the men on the line to work from.

Limerick.—This office was opened in October of 1908. It is in a rented building along with the post office. It is situated about half way between Moosejaw and Wood Mountain. There is a very scattered settlement in this district, which is rapidly filling up with a good class of settlers. It is a hardship to these settlers not to have any communication with the outside and they fully appreciate the opening of this office. In addition to this it will be of great assistance as a testing station. J. W. Wilson, agent.

BATOCHE—DUCK LAKE DIVISION.

This line has been kept in good working order during the year; but nearly all the poles are old and rotten and should be renewed. About 200 poles would be sufficient to put it in good repair for some years to come.

TELEPHONE LINES.

The several telephone lines constructed by the department in the Northwest are all in good order and working satisfactorily.

I have the honour to be, sir,
Your obedient servant,

ROBT. C. MACDONALD,
District Superintendent.

REPORT No. 9.

EDMONTON, ALTA., May 25, 1909.

D. H. KEELEY, Esq.,
General Superintendent,
Ottawa.

DEAR SIR,—I beg to submit herewith a report covering the lines in my inspectorate, and bringing the report up to March 31 of the present year, as requested by you.

I have the honour to be, sir,
Your obedient servant,

J. S. MACDONALD,
General Inspector.

SESSIONAL PAPER No. 19

ANNUAL REPORT COMPLETED TO MARCH 31, 1909.

Saskatchewan Division.—Since the date of my last report, July 5, 1908, a building has been erected at Fort Qu'Appelle, combining an office and living rooms for the agent, at a cost of \$1,975, built on the site of the former office; it is centrally located, is well constructed, and very comfortable.

At South Humboldt a fence was built around the property, and the house and stable were painted, thus greatly improving their appearance; while at the same time protecting the buildings.

The Battleford buildings were treated in a similar manner, and some minor improvements made to the office.

A number of changes have been made on the pole line in various towns in accordance with the request of the town councils.

At Battleford, the old poles were taken down and replaced by new and larger ones, of the same grade as used for telephone and electric light purposes. The line was taken from the streets, placed in the lanes, and generally remodelled and improved.

At Lloydminster similar changes were made.

The city of Edmonton having requested us to remove the old poles from the streets, to replace them with a better class, and requiring a different route to be taken, permission was obtained from the provincial government to utilize their telephone poles within the city limits. This arrangement has proven entirely satisfactory, and has resulted in large saving to the service, as the expense of a new line would have been very great.

Considerable work was done on the line between Battleford and 18 miles east; a section which had been badly scorched by prairie fires, and it is again in good working order.

New Construction.—The work of reconstructing the Lloydminster loop along a new route was carried on as long as the weather permitted. The work was brought almost to completion, and can be finished in a short time this season, as soon as funds are available. As a large percentage of our entire wire troubles originate on this loop, because of the rotting poles, the new loop should greatly facilitate the handling of business.

PEACE RIVER SECTION.

Poles for the first 70 miles north of Athabaska Landing have been delivered on the ground, as also the necessary side blocks for this distance. Contracts for a further 100 miles of poles have been awarded. The work of erecting poles and stringing wire will be proceeded with as soon as the frost is sufficiently out of the ground.

The usual number of poles will be required between Qu'Appelle and Pakan to replace those past service. Probably about 1,000 poles in all will be required this season. From Pakan to Edmonton the line is in good repair. This holds between Edmonton and Athabaska Landing also.

Staff.—No changes have taken place in the staff since my last report.

New Offices.—An office has been installed in the building of the Griffin Packing Company about four miles from Edmonton and connecting with our Edmonton office. The company pays all expenses of operating, and we receive from them considerable revenue.

WOOD MOUNTAIN DIVISION.

Poles for needed repairs on this line were purchased last fall; but too late in the season to permit of being erected. About 150 poles were hauled out to convenient distributing points. There are about 250 poles now stored in Moosejaw, which will be available for this work.

9-10 EDWARD VII., A. 1910

New offices.—The greatest number of homesteads taken up last year were in the district lying between Moosejaw and Wood Mountain. In order to accommodate the inrush of settlement, an office was opened at Limerick, midway between these points. Mr. J. W. Wilson, formerly lineman at Qu'Appelle, was appointed agent.

KAMLOOPS-VERNON TELEPHONE.

Kamloops-Louis Creek, 37½ miles.—A new line just completed with five stations in operation.

KAMLOOPS-LOWER NICOLA SECTION.

Some trouble has been experienced on this section during the past few months due to poles rotting. The poles on this section were reset four years ago, but are again rotting, and a large number will have to be replaced at an early date. Fir is chiefly used along the line, and this wood does not last as well as cedar or tamarac, although the use of a preservative on the butt gives it a much longer life.

Nicola to Penticton.—The original poles still in use, about one-third of the whole, on this section will require to be replaced at an early date.

Penticton to Kelowna.—This portion of the line is in excellent condition.

Kelowna-Vernon.—The work of taking the line from trees and placing it on poles, as also establishing a copper wire circuit between these two points, was not finished last fall. About six weeks time will be required to complete this work. As a large amount of business is transacted at points between Penticton and Vernon, this new circuit, when completed, will relieve the present congestion, and greatly facilitate business. All towns in the Okanagan valley are growing rapidly and I look for a continuous increase of business.

Vernon to Lumby.—This section is in good working order.

SOUTHERN BRITISH COLUMBIA.

The following new lines have been constructed during the past season:—

Salt Spring telephone line, Hope Bay to North Pender.

Salt Spring telephone line, Hope Bay to South Pender.

North Pender to Mayne Island and Galiano Island, 32 miles, including two miles of cable.

Nanaimo to Gabriola Island, 19 miles, including one mile of cable. This line is completed, but is not being operated.

Victoria to Metchosin, 14 miles.

TELEGRAPH LINE.

Telegraph line.—Courtney to Campbell river, 40 miles.

Victoria-Cape Beale Line.—The work done on this line the past season has resulted in a vast improvement in the working condition of the line. Further expenditure, however, will be necessary in order to place it in first-class condition, since, owing to the dense woods and the extremely heavy rainfall along the western coast, it is most difficult to protect the wires from grounds and heavy escapes.

Golden-Windermere Line.—The work in progress on this line at the time of my last report was continued until the appropriation was expended, resulting in a great improvement. Further re-polling will be necessary, as a large majority of the original poles are now rotten at the ground line.

SESSIONAL PAPER No. 19

REPORT No. 10.

VICTORIA, B.C., April 23, 1909.

D. H. KEELEY, Esq.,

General Superintendent, Government Telegraphs.
Ottawa, Ont.

DEAR SIR,—I beg to submit the annual report of the telegraph and telephone lines under my charge for the year ending March 31, 1909.

Victoria and Cape Beale Telegraph Line.—The service on this line has given better satisfaction during the current year, than it has ever done before, mainly because of the improvements made on the trails, changing location of portions of the wire from the old to the new trails and the re-arrangement of the sections and appointments of three additional line repairers. As formerly, 'phones have been supplied to fish-trap companies, line repairers and patrolmen of the Marine and Fisheries Department. There are still several portions of the line west of Port Renfrew that will require to have the location changed, especially is this the case with the first thirteen miles, where at present the line runs on the north side of San Juan mountain where much trouble is experienced in winter from heavy falls of snow. The line should be moved from the north to the south side of the mountain necessitating the cutting of a new trail. This would not be any more expensive than making the old trail passable, the wire on this section is nearly rusted through in many places. The same applies to the next section to the west, and of course wherever the new trail of the Marine and Fisheries Department for life saving and aids to navigation is constructed, poles should be erected and new wire strung. The portion of the line from Victoria to Otter Point will require to be repoled and should be done early this summer.

Alberni and Cape Beale Line.—The Canadian Pacific Railway Telegraph Company line repairers maintain this line and have done so much better during the current year than on any previous year since they assumed its care.

Alberni and Clayoquot Line.—This line is very hard to maintain in working order in winter on account of the rough country, deep snow and windstorms which sweep in from the ocean through Barclay sound and Alberni canal, most of the work of the line has to be done from boats, a large portion of this line will require to be repoled at a very early date.

The portion between New Alberni and Franklin Creek is repaired by the C.P.R. Telegraph Company's linemen.

There being no business done at Mosquito Harbour on the Mosquito Harbour branch line on account of the cessation of work at the lumber mills at Mosquito Harbour. The maintenance of this portion is now carried on by the caretaker of the mills, until such time as a business develops from that point to warrant the upkeep by the government.

Nanaimo and Comox Line.—This line still continues to give great satisfaction, very seldom interrupted, and is now in very good condition with the exception of the portion that has to be repoled. Telephones have been installed in the line repairer's residence at Union Bay for the accommodation of the people on Denman and Hornby Island, in case of emergencies on Sundays or at night when the telegraph office is closed, also for his use in finding out the condition of his line. Also a phone for the use of Linemen Hudson and Mills at Big Qualicum, the north and south ends of their section for the same purposes. A phone has also been granted for the use of the construction party of the Cowichan-Alberni and Comox Railway. An extension of this line was constructed from Courtenay to Campbell river, a distance of 36 miles which is operated as a telephone line with offices at Oyster river and Campbell river and in the Courtenay hotel, Courtenay. The terminus of the line is at Comox, a dis-

9-10 EDWARD VII., A. 1910

tance of four miles from Courtenay, for which a separate line was strung on the main line poles for that distance. Miss Bessie Macdonald, our agent at that point, also acting as our agent on the telephone line. This line has already proved a great source of satisfaction to settlers, sportsmen and general public in the district. So far any repairs that have been made have been made by one of the settlers on the line, and our line repairer, Mr. Thos. Hudson, has kept a general supervision over it, since its construction.

Vancouver, Salt Spring, Pender, Mayne and Galiano Islands Line.—This line was extended last year to North Pender island, offices being established at Browning Harbour and Hope Bay, this year the line was extended from Browning Harbour to South Pender island, offices being established at South Pender wharf and South Pender, also from Hope Bay to Clam Bay on North Pender where the cable crosses from North Pender to Mayne island, where offices were established at Village Bay, Mayne Island hotel and Point Comfort lighthouse. About halfway between Mayne island and Point Comfort lighthouse the cable crosses at the pass to Galiano island, where one office is established in Burrill Bros. store.

An office was also established at Beaver Point, Salt Spring island, near the cable landing and telephone connection was given the Bullman-Allison Lumber Company at Cushion Cove, who built about a mile and a half of line from the main line at a point halfway between South Salt Spring office and Beaver Point. All of the offices on this line are commission offices, repairs are executed when necessary by the following:—

Mr. E. Castley, Duncans.
 Mr. D. Chisholm, Chisholm.
 Mr. R. P. Edwards, South Salt Spring.
 Mr. G. J. Mowat, Ganges.
 Mr. H. Ruckles, Beaver Point.
 Mr. L. S. Higgs, South Pender.
 Mr. P. Garrett, Hope Bay.
 Mr. A. Deacon, Village Bay.

Nanaimo and Gabriola Telephone Line.—This line was constructed during January, February and March, and came to the centre, south and north ends of the island to give the various sections of the island this service. The line is run upon the British Columbia Telephone Company's poles for a distance of five miles from Nanaimo, thence to the cable landing, the cable being about three-quarters of a mile long. Phones have not yet been installed. Connection will be given to the British Columbia Telephone Company's long distance system at Nanaimo, the same as is provided for the Vancouver, Salt Springs, &c., island line at Duncans.

Golden and Windermere Telephone Line.—Poles have been reset on this line for a distance of 47 miles; owing to the severe frost and snow in the latter part of last year it was found impossible to complete the work, the balance of the poles should be reset this year.

This line was changed from a combined telegraph and telephone to a telephone line only on October 1, 1908, and the Golden office was transferred from the Canadian Pacific Railway Company's office to the store of Mr. J. A. Buckham, who was appointed agent. Mrs. Brehaut was appointed agent at Wilmer and Mr. G. E. Sanborn to continue as line repairer from Golden to Wilmer, the balance of the line to be repaired when necessary, and the actual cost of same paid for as it occurs. Mr. J. Lake, Athelmar, being appointed agent at that place on commission, the same as Mr. J. C. Pitts at Windermere.

SESSIONAL PAPER No. 19

Attached herewith you will find a summary of miles of new lines constructed during the year. Total number of miles of line, &c., in operation March 31, 1909, list of employees on the various lines giving occupation and salary.

I have the honour to be, sir,

Your obedient servant,

WM. HENDERSON,

Superintendent Government Telegraphs.

NEW LINES CONSTRUCTED.

	Miles Land line.	Miles cable.
Extension Vancouver Island and Salt Spring Island Telephone line to North and South Pender from Hope Bay North Pender to Mayne Island and Galiano Island	20	2
Nanaimo to north, south and centre of Gabriola Island.	18	1
Courtney—Campbell River.	40	
Victoria—Metchosin	14	

TOTAL NUMBER OF MILES OF LINES, &C., IN OPERATION TO MARCH 31, 1908.

	Miles.	Land lines.	Cable.	No. of Office.	No. of Operators.	No. of Line Repairers.	Messengers.
Victoria and Cape Beale...	118	118		6	6	8	1
Alberni " " " " " "	57	57		2	2	Repairs made by C.P.R.	
Alberni and Clayoquot main line	86 $\frac{3}{16}$	86 $\frac{3}{16}$		7	6	4 Government. 1 C.P.R. from New Alb. to French Ck.	
Alberni and Clayoquot Sec- harts Branch.	9	9					
Alberni and Clayoquot Mos- quito Harbour Branch.	10 $\frac{1}{2}$	10 $\frac{1}{2}$	$\frac{1}{2}$				
Nanaimo and Comox.	90	90		12	12	2	1
Parksville, Alberni Branch.	30	30				Repairs made by C.P.R.	
Nanaimo and Comox Union Bay, Denman, Hornby Isd. Branch.	18	11	7				
Courtney, Campbell R.	40	40					
Golden and Windermere.	90	90		4	5	1	
Vancouver Island and Salt Spring Island Pender, and Mayne and Galiano Island Telegraph Line.	67	60	7	6	16	On commission.	

WM. HENDERSON,

Superintendent Telegraphs.

9-10 EDWARD VII., A. 1910

The following is a list of the employees on the various lines, giving positions and salary:—

	Position.	Office.	Salary.
Victoria and Cape Beale Line—			\$ cts.
William Dee	Agent operator	Victoria	100 00
J. Gordon McKay	Messenger	"	20 00
E. Milne	Agent operator	Sooke	Commission.
E. Gordon	Line repairer	Otter Point	60 00
K. Gordon	Agent operator	"	30 00
J. N. MacVicar	Actg. line repairer	Jordan River	60 00
C. T. Gemmell	"	Slide Hill	60 00
Mrs. E. C. Williams	Agent operator	Port Renfrew	40 00
T. M. Baird	Line repairer	"	60 00
J. Martin	"	Camp Bay	60 00
W. P. Daykin	Agent operator	Carmanah	30 00
Jos. Murphy	Line repairer	Clo-oose	60 00
D. Logan	"	Darling	60 00
C. E. Mousley	"	Banfield	60 00
Mrs. Geo. Scott	Agent operator	Cape-Beale	20 00
Alberni-Cape Beale—			
Mrs. Geo. Scott	"	Cape Beale	20 00
Mrs. P. A. Haslam	"	Alberni	10 00
Alberni-Clayoquot—			
Mrs. P. A. Haslam	"	Alberni	15 00
A. E. Waterhouse	"	New Alberni	Commission.
F. Tyler	Line repairer and agent	Uchucklesit	55 00
J. E. Hillier	"	Toquart	65 00
H. J. Hillier	"	Uchelet	60 00
E. B. Garrard	"	Clayoquot	60 00
Nanaimo and Comox—			
A. M. Oliver	Agent operator	Nanaimo	75 00
W. Spencer	Messenger	"	20 00
P. Good	Agent operator	Nanoose	Commission.
J. G. McKay	Acting agent operator	Parksville	40 00
Wm. Mills	Line repairer	"	50 00
P. L. Crump	Agent operator	Little Qualicum	Commission.
A. Lockwood	"	" School	"
Wm. Keenan	"	Fanny Bay	"
J. McNeill	"	Union Bay	60 00
T. Hudson	Line repairer	"	75 00
T. H. Horne	Acting agent operator	Cumberland	40 00
Miss Bessie Macdonald	Agent operator	Comox	40 00
J. McPhee & Son	"	Courtenay	Commission.
John Johnson	"	"	Subscriber.
Walter Woodhus	"	Oyster River	Commission.
Valdes Logging Co.	"	Between Oyster and Campbell River	"
H. Hagstrom	"	Campbell River	"
Wesley Piercey	"	Denman Island	"
Thos. Chalmers	"	"	"
Thos. Smith	"	Hornby Island	"
Golden and Windermere Telephone Line—			
J. A. Buckham	Agent operator	Golden	40 00
G. E. Sanborn	Line repairer	"	90 00
J. Lake	Agent operator	Athelmar	Commission.
J. C. Pitts	"	Windermere	"
Mrs. J. E. Brehaut	"	Wilmer	40 00
List of subscribers—			
W. J. Barry			
H. L. McKay			
R. McKeenan			
H. Atchison			
J. N. Black			
T. R. Haddon			
Jas. Henderson			

SESSIONAL PAPER No. 19

List of the employees, &c.—*Continued.*

Position.		Office.	Salary.
			§ cts.
List of subscribers— <i>Con.</i>			
A. C. Hamilton			
B. Ashton			
H. A. Stark			
J. E. Griffiths			
Thos. King			
H. G. Parsons, Limited			
C. A. Warren			
Columbia House			
Thos. O'Brien (estate)			
H. G. Low.			
J. Cartwright			
Vancouver Island and Salt Spring Island Line—			
E. Castley	Agent operator	Duncans	Commission.
T. Aitken	"	Maple Bay	"
J. Chisholm	"	Chisholm	"
R. P. Edwards	"	South Salt Spring	"
H. Ruckles	"	Beaver Point	"
Bullman-Allison L. Co.	"	Cushion Cove	"
G. J. Mowat & Co.	"	Ganges	"
U. S. Higgs.	"	South Pender	"
A. R. Spalding	"	" Wharf	"
W. Brackett	"	Browning Harbour	"
J. Auchterlonie	"	Hope Bay	"
A. A. Davidson	"	Clam Bay	"
A. Deacon	"	Village Bay	"
C. J. Macdonald	"	Mayne Island Hotel	"
G. Georgeson	"	Point Comfort Lighthouse	"
Burrill Bros	"	Galiano Island	"
Nanaimo and Gabriola Island Line—			
Line completed. Not yet being operated.			

WM. HENDERSON,
Superintendent Telegraphs.

9-10 EDWARD VII., A. 1910

REPORT No. 11.

SUMMERLAND, B.C., May 1, 1909.

D. H. KEELEY, Esq.,
General Superintendent,
Ottawa, Ont.

DEAR SIR.—In compliance with your request, I have the honour to give report covering the lines under my jurisdiction, from my last report up to and including March 31, 1909.

In as much as my last report covered up to December 31, 1908, there is very little to report at this time.

Kamloops to Louis Creek section being new, is in good repair, and likely to be so for some years yet.

Kamloops to Nicola section, where poles were reset four years ago, is showing indications of decay, which may mean, the resetting of the poles again next year. On the first opportunity, I will have my foreman make an examination of this section, and report on its needs.

Nicola to Lower Nicola section, as previously reported, will require to be repoled this year.

Nicola to Hedley, and Hedley to Penticton sections. You will remember these two sections when first constructed were constructed by using trees over a considerable portion of the way. My foreman, Mr. Woodburn, reports that the poles used at that time were very small in size, and are fast decaying, and will probably have to be replaced next year. No preservative was used on the butts of these poles when placed in the ground.

Penticton to Kelowna section. This was the first section built under my superintendency. Preservatives were used on the butts of the poles on this section, and to all appearances, the line is almost as good as new.

Kelowna to Vernon section. The work began in the late fall, to place poles where trees were used, and to string a new copper circuit, was discontinued January 1, 1909, and will require about six weeks to complete, after I am advised of funds being available for so doing.

Vernon to Lumby. This line is in good condition, and requires no attention.

Revenue.—From the standpoint of revenue, taking the whole system under my jurisdiction into consideration, it cannot be said to be very discouraging, but this is largely due to the heavy business done from Hedley, north, to Vernon, particularly that portion which traverses the Okanagan valley. If local exchanges are installed at Merritt and Princeton, there should be a change in these two districts.

New Work or Extensions.—No new work or extensions have been undertaken since my last report.

Faithfully yours,

CHAS. S. STEVENS,
Superintendent.

SESSIONAL PAPER No. 19

REPORT No. 12.

VANCOUVER, B.C., July 28, 1909.

D. H. KEELEY, Esq.,
General Superintendent,
Ottawa, Ont.

DEAR SIR,—I beg to submit my annual report, covering the operations of the Yukon telegraphs, for the fiscal year 1908-9.

Main Line—Ashcroft, B.C., to International Boundary, beyond Dawson, Y.T.—

During the past year, interruptions on the main line were infrequent, and, in nearly every case, repairs were made within a few hours, so that there was little or no delay to business. The work of the general repair gangs during the preceding summer, in widening the right of way, and falling menacing timber, in the mountain sections north of Hazelton, had the desired effect in reducing the number of breaks from falling timber, especially during the winter months. Repoling of that portion of the line between 150-Mile House and Quesnel, along the Cariboo wagon road, was begun in July and completed in September. Two gangs were employed on the work—one working north from 150-Mile House to Quesnel, and the other working south from Quesnel, as it was found that a larger number of poles than at first was anticipated, required resetting, and the season during which pole resetting could be done to advantage, closes early in September. The work done by these gangs was of a very satisfactory nature, and that portion of the line is now in excellent condition. Telephones were installed at Clinton and 83-Mile House, and an office opened at the latter point. These telephones are attached to No. 1 (or the local telegraph wire along the Cariboo road) and do not affect No. 2, the Dawson wire.

Hazelton-Prince Rupert and Port Simpson Branch.—Railway construction on the Grand Trunk Pacific from Prince Rupert, eastward for one hundred miles, began in May, and, as the railway parallels the telegraph line, and, in some places, usurps our right of way, innumerable interruptions were of daily occurrence during the months of June, July and August, mainly due to the clearing of timber for the one hundred foot wide railway right of way. As the telegraph line and railway follow the base of heavy timbered bluffs for great distances, and, as the fisheries regulations prohibited the contractors from falling the timber into the river, the line was in places completely destroyed. Although extra linemen were placed in railway camps, in some cases only two miles apart, they could not keep pace with the interruptions, and every expedient was resorted to to keep the business moving. Four new telegraph offices were also installed at intermediate points to facilitate the locating of breaks, confining the movements of the linemen to the sections affected. In some places, where bald mountains rise sheer from the water, iron rods were used, and the line placed as far as possible out of the line of danger, but blasting operations later caused further damage, and this is still of daily occurrence at one point or another, along that portion of the line. As it was anticipated that railway construction would cause us trouble, a general repair gang was started from Hazelton on the opening of navigation in May, and the line reconstructed its entire length, and, where possible, the line was diverted to escape damage from railway construction work. After the line had been reconstructed, and the greater part of the timber clearing completed, interruptions were reduced to a minimum. Traffic on this branch has increased at a rapid rate, and, a much greater and continued increase is looked for, especially at Prince Rupert, when the townsite at that point is placed on the market.

Horefly Branch (150-Mile House to Quesnel Forks).—The closing down of the Guggenheim mines at Bullion has caused a decrease in the earnings of this branch, but the belief is expressed that the work will be resumed in the near future, when

9-10 EDWARD VII., A. 1910

Bullion office will be reopened, and the telegraph business show a decided increase.

The line will require considerable repair next season, as a great many of the poles are showing signs of decay, and the majority of them will require to be reset or renewed.

Lillooet Branch (Hat Creek to Lillooet, B.C.)—This line is in good order, and the business for the past year compares favourably with that of former years.

Barkerville Branch (Quesnel to Barkerville, B.C.)—This line is also in good order.

During the year, telephone offices were established at Locks, Cottonwood, Wingdam and Stanley, which increased the revenue of the line and gave great satisfaction to the public in this district.

I have the honour to be, sir,
Your obedient servant,

J. T. PHELAN,
Superintendent.

SESSIONAL PAPER No. 19

REPORT No. 13.

NORTH SYDNEY, N.S., March 31, 1909.

D. H. KEELEY, Esq.,
General Superintendent, Government Telegraphs,
Ottawa, Ont.

DEAR SIR,—Below is a statement of the cable handled by the C.G.S. *Tyrian* during the season of 1908:—

DEEP SEA.

	Knots.	Knots.
Left in tanks from 1907..		23.00
Sent to Ontario by rail..	2.00	
June 13—		
Picked up, repairing St. Paul Island cable.. . . .		2.75
Laid down, repairing St. Paul Island cable.. . . .	6.18	
June 27—		
Laid down, repairing Scatarie cable..	2.84	
September 4—		
Sent to Island of Orleans, Que..	1.00	
October 23—		
Sent to British Columbia by rail..	5.75	
Left in tanks..	7.98	
Total..	25.75	25.75

SHORE END.

	Knots.	Knots.
In tank from 1907..		.59
June 27—		
Picked up at Scatarie Island..		1.00
Laid down at Scatarie Island..	.50	
October 23—		
Left in tank..	1.07	
Total..	1.57	1.57

Respectfully submitted,

(Sgd.) A. B. McDONALD,
Electrician.



PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS

1908-1909

DEPARTMENT OF PUBLIC WORKS,
COLLECTION OF REVENUE,

OTTAWA, June 2, 1909.

N. TESSIER, Esq.,
Secretary, Department of Public Works,
Ottawa, Ont.

SIR,—I have the honour of submitting my report for the twelve months ended March 31, 1909.

Other pressing duties requiring my attention, I regret that I have been unable to examine, as usual, the books and accounts of the officers under my control.

During the twelve months just closed the revenue accrued from public works shows a decrease of \$12,691.81, being \$162,525.28, while for the previous year it was \$175,217.09.

The collections show a decrease of \$6,695.27, being \$160,363.06, while in the preceding year they amounted to \$167,058.33.

The revenue accrued from slides and booms was \$77,771.11, or \$16,522.42 less than for year ended March 31, 1908.

The collections were \$76,455.41, or \$10,305.26 less than the previous year.

The outstanding uncollected revenue was decreased by \$207.06.

The graving docks yielded \$60,505.16, or \$2,703.42 less than in 1907-8.

Rents collected amounted to \$23,268.44, an increase of \$6,179.36.

One hundred and thirty-four dollars and five cents wharfage at North Bay, Pelee Island, was also collected.

Having dealt with the revenue in a general way, I now submit the particulars in detail, relative to the several services under their respective head.

SLIDES AND BOOMS

OTTAWA DISTRICT.

The tolls charged up amounted to \$40,390.99, \$4,759.47 less than in 1907-8.

The number of sawlogs that passed through the works was 4,026,487 pieces, or 460,674 pieces less than the previous year.

The falling off in the revenue compared with the previous year was largely attributable to the large quantity hung up in consequence of the unprecedentedly low water.

Of square timber there were only 3,296 pieces. There were none whatever in 1907-8.

All the revenue accrued in this district during the twelve months to March 31 last was collected except \$2,370.15.

Of the dues accrued since July 1, 1889, when this department took over the collection, there remains uncollected \$13,667.90, full particulars of which will be found in statement No. 2 herewith.

Of the dues accrued before July 1, 1889, there still remains \$56,805.65, all of which should be written off. See statements Nos. 1 and 3 herewith, for particulars.

9-10 EDWARD VII., A. 1910

The accounts for the Ottawa district stand thus:—

Dues accrued during year to March 31, 1909.. . . .	\$40,390 99
Of which there has been collected.. . . .	38,020 84
Dues of 1907-8 collected 1908-9.. . . .	2,389 32
Dues accrued prior to the collection being transferred to this department July 1, 1889.. . . .	56,805 65

Dues of—

1889-90.. . . .	\$ 6,903 05
1890-1.. . . .	28 42
1892-3.. . . .	379 80
1896-7.. . . .	196 71
1903-4.. . . .	637 37
1907-8.. . . .	3,152 40
1908-9.. . . .	2,370 15

\$13,667 90

Of the dues accrued since this department assumed the collections, \$1,014,961.76, all but \$95.83, absolutely coming to this department has been collected, the remainder being items disputed and awaiting departmental action.

The increases and decreases from the different works, as compared with 1907-8, were as follows:—

Increases—

Main Ottawa.. . . .	\$ 512 66
Petawawa.. . . .	515 22
Madawaska.. . . .	715 21

Decreases—

Chenau Boom.. . . .	254 15
Coulonge.. . . .	3,988 53
Dumoine.. . . .	111 15
Black River.. . . .	1,453 35
Gatineau.. . . .	695 38

Reverting to the matter of the number of pieces of saw logs being smaller this year than last—I may say that a large quantity of small spruce, formerly classed as saw logs in the returns, being now manufactured into pulp, is dealt with and charged by the cord of 115 cubic feet computed on the cubic contents of each piece.

Herewith are statements in detail:—

- No. 1.—Statement of amounts outstanding prior to July 1, 1889, uncollected, March 31, 1909.
- No. 2.—Statement of dues accrued at Ottawa since July 1, 1889, uncollected March 31, 1909.
- No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncollected March 31, 1909.
- No. 4.—Statement of the number of pieces of square timber saw logs, &c., which passed through the Ottawa works during the year ended March 31, 1909.
- No. 5.—Statement of Dues accrued from each of the slides and work in in the Ottawa district, during the year ended March 31, 1909.

ST. MAURICE DISTRICT.

The revenue from this district was \$34,365.86 being \$11,062.35 less than in 1907-8, which was the largest in the history of these works.

The revenue of 1908-9, \$34,365.86 was all collected.

SESSIONAL PAPER No. 19

The number of pieces of all kinds of timber that passed through the works was equivalent to 3,634,188 saw and pulp logs.

Since I took charge of this district in 1892 all the revenue has been collected.

The amount outstanding prior to July 1, 1892, remains at the same figure, viz.—\$14,486.49, and should be written off—for reasons assigned in statement No. 6 herewith.

The falling off in the quantity of logs during the past year was partially due to low water and in a measure to many logs being hung up in consequence of the reduced demand for pulpwood. I anticipate a large increase in the revenue this year as it is said there are about 7,000,000 logs to come, the St. Maurice being very low at the opening of navigation, the booms at Three Rivers were in position in good time and not one log was lost.

I venture to repeat that the alligator tugs continue to give great satisfaction, and it is daily being realized what an advantage it is to have the aid of these machines, in fact I may make bold to say that it would be next to impossible to handle the immense number of logs now coming down this river without them.

I have for several years urged the adoption of a system of water storage on the tributaries of the St. Maurice, and I have much pleasure in stating that the lumbermen have taken this matter into their own hands. One dam has been erected on the Manouan to be supplemented later on as the company may find necessary or useful.

The establishment of this system would not be beneficial only to the lumbermen, it is a great help to the interest of the government, in the first place, the safe conveyance of the timber to the mills, means a good revenue and secondly holding back the waters, as proposed, in the spring will tend largely to prevent such freshets as have occurred in the current year or as on one occasion when all the works in the river were swept away by the flood. The experience of this season has demonstrated the necessity for raising the piers at Grandes Piles and Pointe à Bernard above the Shawenegan Falls, at which place there should be also at least two new piers erected during the current year. With these improvements the works would be in a condition to retain the immense number of logs now coming down the St. Maurice, with almost certain safety.

NEWCASTLE DISTRICT.

The dues accrued from this district amounted to \$1,480.96, all of which was collected; decrease, \$432.90.

The tolls outstanding on March 31, 1900, amounted to \$3,556.89 of which \$3,521.19 should be written off in accordance with a judgment of the Exchequer Court, the remainder, \$35.70, will also have to be written off, the debtor being a very old man and hopelessly insolvent.

Full particulars of amount outstanding will be found in Statement No. 7, herewith.

The reduction in the revenue has been caused mostly by the timber country owned by the largest operator having been nearly all cut over for pine, in fact the current season will probably be the last of this concerns working in these waters.

SAGUENAY DISTRICT.

The revenue accrued during the past fiscal term was \$1,533.30. None of which has yet been collected. The total uncollected to date being \$5,624.82.

The Chicoutimi Pulp Company are under contract with the department to contribute any deficiency which may occur between the cost of maintenance and the amount realized from tolls on timber passing through the Saguenay. An effort is now being made to enforce this contract.

The company however dispute their liability on the ground that the boom was not completed till late in the season of 1906 and that the boom was not in the proper place.

9-10 EDWARD VII., A. 1910

There is also a counter claim for timber lost through the boom not being ready when expected, thus the timber passed down the river and was a total loss to the owner. The amount involved, however, is but \$56.57, and the quantity of timber so lost was over 800 pieces of 20 feet and upwards in length.

Statement No. 8, herewith shows the particulars of the revenue from this district.

GRAVING DOCKS.

ESQUIMALT GRAVING DOCK.

The revenue from this service was \$20,583.36, being \$9,176.84 less than the previous year, which was the largest in the history of the dock. Of the 158 days the dock was used during the year, it was occupied for only 19 days by H.M. vessels,

LEVIS GRAVING DOCK.

The revenue was \$4,875.47 more than for the year 1907-8, being \$29,227.96. See statement No. 10.

During the season of navigation of 1908 the dock was occupied for 260 days by 26 vessels of 43,162½ tons.

During the winter of 1908-9 ss. *Campana*, *Lady Evelyn*, dredge *Progress* and tugs *Monitor* and *Storm King*.

KINGSTON GRAVING DOCK.

This dock was occupied for 241 days, including winter months. The income for the year was \$10,693.84, or \$1,597.95 more than in 1907-8. See statement No. 11.

The steamer *Bickerdike*, dredge *Sir Richard*, and barge *Ungava* occupied the dock during the winter of 1908-9.

RENTS.

The rents accrued during the fiscal year amounted to \$24,114.97, being \$6,399.99 more than for 1907-8.

On April 1, 1908, there was \$611.40 outstanding from the previous year, making a total of \$24,726.37 collectable during the year just closed. Of this \$23,268.44 was collected, \$273.43 written off in lieu of repairs, and on account of poverty, leaving \$1,184.50 uncollected on March 31 last.

Of the amount uncollected, about one-fifth is covered by a counter claim for improvements or repairs and most of the remainder will likely be paid. Some few of those indebted are poor people who were in possession when the properties came to us, who have necessarily been treated leniently. The properties this class occupies are mostly old buildings in bad condition from which very little revenue could be expected.

The work of this office has been very much increased in securing the rents from the properties lately acquired by the government on Sussex street and McKenzie avenue. This branch of our business requires much time, in investigating claims for remission on many grounds and claims for repairs or privileges said to have been promised by the previous owner.

SESSIONAL PAPER No. 19

The collections on this account were as follows:—

Property or Privilege Rented.	Collected.
Old P. O. building, Victoria, B.C.	\$ 4,212 00
Sussex street property, Ottawa, Ont.	15,089 96
Examining warehouse site, Montreal, Que.	2,227 48
Portion Kingston graving dock premises.	250 00
Pt. Reserve, Victoria Island, Ottawa.	2 00
Reserve, east side St. Maurice river.	50 00
Postal station site, Montreal.	289 50
Privilege of erecting towers in Burlington Beach.	1 00
Island and waterpower, Calumet channel, P.Q.	25 00
Pt. Reserve, Pond Creek, P.Q.	1 00
Pt. Reserve, west side Black river, P.Q.	25 00
Ile Caron, P.Q.	75 00
Land in Ottawa, Ont.	1 00
Land on Columbia and Begbie streets, Westminster, B.C.	100 00
Sand privileges, Burlington Beach canal.	100 00
Old Government House, Yale, B.C.	5 00
Privilege water pipe connection, William Head, B.C.	12 00
Portion immigration building, Port Arthur, Ont.	100 50
Examining warehouse site, Vancouver, B.C.	700 00
Kingston, piece of land on Clarence street.	1 00
Privilege of laying tracks on bridge near Edmonton.	1 00
	\$23,268 41

The following comparative table of Public Works Revenue accrued during the year ended March 31, 1909, compared with that of the fiscal year ended March 31, 1908, shows at a glance in what accounts increases and decreases herein reported have occurred:—

	Year ended March 31, 1909.	Year ended March 31, 1908.	Increase, 1909.	Decrease, 1909.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
SLIDES AND BOOMS.				
Ottawa District.	40,390 99	45,150 46		4,759 47
St. Maurice District.	34,365 86	45,428 21		11,062 35
Newcastle District.	1,480 96	1,513 86		432 90
Saguenay District.	1,533 30	1,801 00		267 70
	77,771 11	94,293 53		16,522 42
GRAVING DOCKS.				
Esquimalt, B.C.	20,583 36	29,760 20		9,176 84
Kingston, Ont.	10,693 84	9,095 89	1,597 95	
Levis, Que.	29,227 96	24,352 49	4,875 47	
	60,505 16	63,208 58	6,473 42	9,176 84
Net decrease, 1909, \$2,703.42.				
Rents.				
	24,114 97	17,714 98	6,399 99	
WHARFAGE.				
North Bay, Pelee Island.				
	134 05		134 05	

9-10 EDWARD VII., A. 1910

In conclusion I have to acknowledge the uniform courtesy and cheerful assistance accorded me at all times by the officers with whom I have been brought in contact during the year.

I have the honour to be, sir,

Your obedient servant,

EDW. T. SMITH.

SESSIONAL PAPER No. 19

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding March 31, 1909.

By whom due.	Bad and Doubtful Debts.		Chaudiere Boomage in Suspense.		Other Slide and Boom Dues Disputed.		Total Outstanding on Sept. 30, 1902.		Year to which Dues belong.		Remarks.
	\$	c.	\$	c.	\$	c.	\$	c.			
John & Wm. McLean	53	14					53	14	1873		Insolvent.
John Rowan	342	50					342	50	1872-1873		"
Lemieux & Charette	21	30					21	30	1873		"
Tailon & Lapierre	148	10					148	10	1873-1874		"
Mosgrove & McHarty	261	42					261	42	1873-1874		"
W. C. Wells	600	90					600	90	1873-1874		"
Dufresne & McHarty	528	80					528	80	1874-1875		"
Walton Smith	171	46					171	46	1874-1875		"
A. H. Baldwin	3,507	92					3,507	92	1871 to 1874		"
Hon. James Skead	9,807	65					9,807	65	1861, 1863, 1864, 1869, 1875 to 1878		"
Batson & Currier	5,558	70					5,558	70	1875 to 1877		"
A. F. A. Knight	546	30					546	30	1878		"
James Walker	11	25					11	25	1877		"
R. Campbell & Son	1,558	50					1,558	50	1879 to 1881		"
James G. Bryson	73	50					73	50	1886		"
Castello Bros.	90	62					90	62	1882		"
N. E. Cormier	428	34					428	34	1888		"
James Yuhill	9	29					9	29	1876		Overcharge.
J & B. Grier	76	84					76	84	1883		"
R. & W. Conroy	95	42					95	42	1882-1883		"
A. P. White	101	00					101	00	1881		"
B. Caldwell & Son	4	33					4	33	1887		"
J. R. Booth	9,871	92			398	88	10,270	81	1881 to 1888		"
Perley & Pattee	8,889	85					8,889	85	1881 to 1888		"
The Brunson & Weston Lumber Co.	8,180	79					8,180	79	1881 to 1888		"
Pierce & Co	462	18					462	18	1888		"
G. A. Grier & Co.	1,000	59					1,000	59	1886-1887		"
Estate late Levi Young	1,461	20					1,461	20	1881 to 1885		"
Wm. Mason	413	85					413	85	1881 to 1888		"
Gilmour & Co.	406	27					406	27	1884		"
John Rochester	258	88					258	88	1881 to 1883		"
J. & G. Bryson					252	20	252	20	1886		"
	23,997	28	31,006	54	651	08	55,653	90			

\$398.88, counter claim for damages by the breaking of Coulonge Boom.

*Chaudiere boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.

Counter claim for damages by breaking of Coulonge Works.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 15, 1908.

9-10 EDWARD VII., A. 1910

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works, since July 1, 1889, Outstanding on March 31, 1909.

Name.	Year to which Dues belong.	Chaudiere Boomage in Suspense.	Cheneaux Boomage.	Ordinary Dues.	Total.	Remarks.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	
J. R. Booth.	1889-90	2,561 69	.....	.....	2,561 69	
The Bronson & Weston Lumber Co.	1889-90	2,056 96	.....	.....	2,056 96	
Perley & Pattee.	1889-90	1,203 26	.....	.....	1,203 26	Chaudiere boomage reported to Council and referred to Treasury Board, should be written off.
Wm. Mason & Sons.	1889-90	167 66	.....	.....	167 66	
Pierce & Co.	1889-90	913 48	.....	.....	913 48	
Alex. Fraser, acct. Thos. Stephens.	1890-91	.....	.....	28 42	28 42	Legal action taken to recover this.
J. R. Booth.	1892-93	.....	.....	379 80	379 80	Retained by Mr. Booth in settlement of account due him, which the Auditor General refused to pay as Mr. Booth appeared to be in arrears in this and Statement No. 1
Bryson & Fraser.	1896	.....	.....	196 71	196 71	Have counter claim for work done on slide to this amount.
J. R. Booth	1903	.....	.....	339 27	339 27	"
Hawkesbury Lumber Co.	1903	.....	.....	298 10	298 10	"
Hawkesbury Lumber Co.	1907	.....	743 32	.....	743 32	Claim for reduction before the department.
J. R. Booth	1907-08	.....	3,315 15	.....	3,315 15	"
Shepard & Morse Lumber Co.	1907	.....	434 56	.....	434 56	"
Estate late R. Hurdman	1907	.....	62 11	.....	62 11	"
Low Lumber Co.	1908	.....	.....	67 41	67 41	"
		6,903 05	4,555 14	1,309 71	13,667 90	

EDW. T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 15, 1909.

SESSIONAL PAPER No. 19

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for Collection.

Name.	From 1860.	From 1861.	Total.
	\$ cts.	\$ cts.	\$ cts.
Hon. James Skead	245 00	210 00	455 00
James Mair.....	.....	696 75	696 75
	245 00	906 75	1,151 75

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem, Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the Collector of Slide Dues; consequently, these accounts remained in abeyance.

Since then, both parties died, and I believe both were insolvent at the time of their death.

EDW. T. SMITH.

Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

No. 4.—STATEMENT of the Number of Pieces of Square Timber, Saw Logs, &c., that passed through the government slides and works on the River Ottawa and its Tributaries during the Fiscal Year ended March 31, 1909.

	Pieces.
Square timber.. . . .	3,296
Saw logs.. . . .	4,026,487
Boom and dimension timber.. . . .	61,529
Cedars.. . . .	89,932
Railroad ties.. . . .	558,379
Fence posts.. . . .	74,435
	4,814,058

Also 60,190 $\frac{1}{10}$ cords pulp wood.

The revenue accrued on the above was \$40,390.99.

EDW. T. SMITH.

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

9-10 EDWARD VII., A. 1910

No. 5.—STATEMENT Showing the Dues acerued on the Undermentioned Works on the River Ottawa and its Tributaries during the Fiscal Year ended March 31, 1909.

River or other Improvement.	Amount.
Main Ottawa..	\$ 2,719 58
Chenaux boom..	6,431 41
River Petawawa..	14,829 05
Madawaska..	1,189 33
Coulonge..	3,660 83
Dumoine..	62 03
Black River..	4,543 26
Gatineau..	6,955 50
	\$40,390 99

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

EDW. T. SMITH,
Collector of Public Works Revenue.

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works outstanding on March 31, 1909.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		\$ cts.	\$ cts.	
George Baptist, Son & Co.	1878	469 95		Have counter claims for damages to loss caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes.
"	1879	2,110 62		
"	1880	1,696 18		
"	1881	293 69		
"	1882	165 80		
"	1884	118 50		
"	1888	4 28	4,859 02	The claims were submitted to Special Commissioner, Mr. McDougall, afterwards Judge, who, after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
Ross, Ritchie & Co.	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38	5,281 48	
Alex. Baptist.....	1879		2,116 96	
Wm. Ritchie & Co.	1888	779 24		
"	1889	332 11		
Ritchie Bros.....	1886	413 43	1,111 35	Of this amount \$754.20 is claimed to be an overcharge. Insolvent.
"	1887	634 71		
			1,048 14	This amount is composed of overcharges in 1886 and 1887 of \$442.76 and overpayment in 1884 of \$205.38.
G. B. Hall.....	1890	.....	49 34	
T. E. Normand.	1890		42 28	Claims that this balance is an overcharge. Would cost more to collect than it is worth.
Trefflé Biron	1891	.....	0 92	
			*14,481 49	

* To make this balance agree with the Public Accounts, there should be deducted \$7.93 over credited Alex. Baptist, and \$217.17 added thereto, being \$190.40 paid July 23, 1884, and \$26.77 overcharged in error to Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, of \$14,690.73.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

EDW. T. SMITH,
Collector of Public Works Revenue.

SESSIONAL PAPER No. 19

No. 7.—STATEMENT of Slides and Boom Dues accrued from the Newcastle and Trent River Works, remaining uncollected March 31, 1909.

Name.	Year to which Dues belong.	Amounts disputed.	Ordinary Dues.	Total.	Remarks.
		\$ cts.	\$ cts.	\$ cts.	
Irwin & Boyd	1881	59 79		59 79	} Insolvent.
Thomson & McArthur..	1880	52 78		52 78	
Jabez Thurston	1882	12 50		12 50	
McDougall & Ludgate.	1879	65 07		65 07	
Bigelow & Trounce	1882 to 1885	216 21		216 21	
R. G. Strickland	1882, '83, '85, '86 and '87.	215 08		215 08	} Dead and estate distributed.
Est. late Geo. Hillard.	1877 to 1883 and 1886	354 15		354 15	
T. G. Hazlett	1881, '82, '84 and '89	885 25		885 25	} According to judgment in Exchequer Court, <i>re</i> Boyd vs. Smith, these cannot be collected.
J. M. Irwin	1882, '83, '85 and '88	698 45		698 45	
D. Ulyot	1881 to 1887	547 68		547 68	
Green & Ellis	1881 to '83, '85, '88 and '89	157 01		157 01	
A. W. Parkin	1884, '85, '88, '90 and '91 ..	65 92		65 92	
The Dickson Estate	1883	137 50		137 50	} Sent to Dept. of Justice for collection.
Alfred McDonald	1888	40 80		40 80	
John Parkin	1889	13 00		13 00	
John Dovey	1894, '95, '96		35 70	35 70	
		3,521 19	35 70	3,556 89	

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

No. 8.—STATEMENT of Slide and Boom Dues from Saguenay Works, uncollected March 31, 1909.

Name.	Year to which Dues belong.	Amount.	Remarks.
		\$ cts.	
La Cie de Pulpe de Chicoutimi	1906, 1907, 1908	5,568 15	Disputed.
Jos. Vachon	1906	56 67	"
		5,624 82	

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 2, 1909.

9-10 EDWARD VII., A. 1910

THE DRY DOCK AT ESQUIMALT.

No. 9.—STATEMENT of Dues and Other Charges Collected During the Year ended March 31, 1909.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE.		Dockage charges.	Other charges.	Total.
		From	To			
		1908.	1908.	\$ cts.	\$ cts.	\$ cts.
S.S. 'Taunton'	3,793	April 3...	April 4...	200 00	1 20	201 20
S.S. 'Agapanthus'	4,287	" 27...	" 28...	400 00	.....	400 00
S.S. 'Victoria'	3,502	May 18...	May 19...	511 00	1 20	512 20
S.S. 'River Fourth'	4,413	" 30...	" 31...	400 00	1 20	401 20
S.S. 'Suveric'	6,585	June 2...	June 4...	572 00	301 20	873 20
S.S. 'Greenwich'	2,938	Aug. 5...	Aug. 6...	400 00	1 20	401 20
S.S. 'Indravelli'	5,805	" 10...	" 11...	400 00	7 70	407 70
S.S. 'Thyra'	3,742	Sept 14...	Sept. 16...	515 00	60	515 60
S.S. 'Amiral Exelmans'	6,029	" 17...	" 18...	561 00	.....	561 00
H.M.S. 'Algerine'	1,100	" 29...	Nov. 16...	1,742 00	.....	1,742 00
S.S. 'Rygia'	Water	supplied.	.....	.....	1 40	1 40
S.S. 'Fukul Mary'	5,339	Nov. 18...	Nov. 28...	1,723 00	24 60	1,747 60
D.G.S. 'Lillooet'	591	" 30...	Dec. 2...	350 00	.....	350 00
S.S. 'Glenfarg' . . . . .	.....	Entry	fee.....	200 00	.....	.....
S.S. 'Eir'	Water	supplied	.....	.....	2 10	2 10
S.S. 'Glenfarg'	4,550	Dec. 10...	Dec. 22...	3,372 00	82 70	3,454 70
Sp. 'Lord Shaftesbury'	2,341	" 23...	" 24...	487 00	2 10	489 10
			1909.			
S.S. 'Glenfarg'	4,550	" 26...	Feb. 7...	5,433 00	346 20	5,979 20
S.S. 'Eir'	Water	supplied.	.....	.....	2 80	2 80
			1909.			
S.S. 'Agapanthus'	4,287	Feb. 12...	Feb. 14...	526 00	51 10	577 10
H.M.S. 'Egeria'	940	" 19...	March 9...	685 76	.....	685 76
Dredge 'Fruhling'	745	March 15...	" 16...	350 00	201 10	551 10
S.S. 'Princess Charlotte'	3,844	" 22...	" 24...	517 00	10 20	527 20
S.S. 'Amiral Dupere' . . . . .	.....	Entry	Fee.....	200 00	.....	200 00
	69,381			\$19,544 76	\$1,038 60	\$20,583 36

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 7, 1909.

SESSIONAL PAPER No. 19

THE DRY DOCK AT LEVIS.

No. 10.—STATEMENT of Dues and Other Charges Collected During the Year ended March 31, 1909.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE.		Dockage charges.	Other charges.	Total
		From	To			
		1907.	1907.	\$ cts.	\$ cts.	\$ cts.
S.S. 'Montcalm'.....		Nov. 27...	Dec. 1...	1,476 40	50 00	1,526 40
S.S. 'Quebec'.....		Wintering		1,000 00		1,000 00
S.S. 'Lady Eileen'.....				400 00		400 00
		1908.				
S.S. 'Campana'.....	1,697	April 18...	April 23...	731 82		731 82
S.S. 'Carleton'.....	1,350	" 25...	May 14...	1,504 25	6 25	1,510 50
Tug 'Witherbee'.....		Wintering		250 00		250 00
Damages.....					2 00	2 00
Dredge 'International'.....	528½	April 25...	May 14...	834 75		834 75
Light Ship 'Anticosti'.....	269	" 25...	" 14...	555 55		555 55
Three Gov't Scows.....	230	" 25...	" 14...	518 50		518 50
S.S. 'La Canadienne'.....	372	May 14...	" 18...	374 40		374 40
S.S. 'Ottawa'.....	3,071	" 21...	June 12...	3,731 24	123 50	3,854 74
S.S. 'Lord Strathcona'.....	495	July 2...	July 7...	399 00		399 00
Barge 'Felix Carbray'.....	591	" 8...	" 8...	300 00		300 00
S.S. 'Amethyst'.....	1,357	" 9...	" 18...	899 59		899 59
S.S. 'Rapids King'.....	1,800	" 18...	" 29...	1,241 00		1,241 00
S.S. 'Montcalm'.....	1,432	June 15...	June 30...	1,316 60		1,316 60
S.S. 'Arctic'.....	762	" 15...	" 30...	871 50		871 50
S.S. 'Champlain'.....	522	July 2...	July 7...	430 50		430 50
S.S. 'Portsmouth'.....	2,185	" 30...	Aug. 14...	1,805 50		1,805 50
S.S. 'Borgestad'.....	3,944	Aug. 17...	" 22...	915 52		915 52
S.S. 'Campana'.....	1,697	Entry fee for winter		200 00		200 00
S.S. 'Brockville'.....	941	" " " "		200 09		200 00
S.S. 'Malin Head'.....	3,467	" " " "		200 00		200 00
S.S. 'Corinthian'.....	6,227	Sept. 16...	Oct. 9...	4,591 88	89 25	4,681 13
Barge 'Henry R. James'.....	1,600	Oct. 12...	" 22...	1,070 00		1,070 00
S.S. 'Lady Grey'.....	733	Aug. 29...	Sept. 2...	200 00	50 00	250 00
S.S. 'Ashanti'.....	3,389	Nov. 14...	Nov. 14...	1,224 46	24 75	1,249 21
Dredge 'Beanjen'.....	2,500	Oct. 27...	Nov. 5...	1,690 00	39 75	1,639 75
	43,162½			\$28,844 46	\$ 383 50	\$29,227 96

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 7, 1909.

9-10 EDWARD VII., A. 1910

THE DRY DOCK AT KINGSTON.

No. 11.—STATEMENT of Dues and other charges Collected during the Year ending March 31, 1909.

Name of Vessel Docked.	Tonnage.	PERIOD OF DOCKAGE.		Dockage Charges.	Other Charges.	Total.
		From	To			
		1908.	1908.	\$ cts.	\$ cts.	\$ cts.
Str. 'Aletha'.....	171	April 10.	April 11.	34 20		34 20
Tug 'Glide'.....	78	" 13.	" 15.	40 00		40 00
Bge. 'Kingston'.....	578	" 15.	" 17.	168 49	6 00	174 49
" 'Augustus'.....	802	" 20.	" 23.	242 46	6 00	248 48
Str. 'Glengarry'.....	495	" 23.	May 1.	306 90	5 00	311 90
" 'Pierrepoint'.....	252					
" 'Ramona'.....	57	May 4.	" 11.	191 58	3 00	194 58
Sch. 'Maizie'.....	294	" 12.	" 13.	69 09		69 09
Str. 'America'.....	521	" 14.	" 15.	120 34		120 34
" 'Turbinia'.....	1,064	" 18.	" 20.	230 88	5 00	235 88
" 'St. Joseph'.....	304	" 25.	" 27.	82 08	10 50	92 58
" 'Brockville'.....	191	" 28.	" 29.	48 20		48 20
Yacht 'Corona'.....	304	June 10.	June 13.	103 36	10 50	113 86
Sch. 'Ford River'.....	235	" 15.	" 17.	77 00		77 00
Bge. 'Alberta'.....	314	" 20.	" 20.	62 80		62 80
Tug 'Emerson'.....	276	" 22.	" 23.	65 20	5 00	70 20
Bge. 'Bella'.....	454	" 23.	" 25.	122 58	3 00	125 58
Str. 'Scout'.....	176	" 3.	" 6.	75 20		75 20
Dredge 'Sir Richard' and two scows.....	285	" 26.	" 30.	107 00	10 50	117 50
Str. 'Arundell'.....	339	" 30.	July 8.	222 05	74 40	296 45
Bge. 'Quebec'.....	989	July 9.	" 11.	218 13	6 00	224 13
Str. 'Ontario No. 1'.....	3,229	" 19.	" 22.	1,050 99	31 80	1,082 79
Tug 'D. G. Thompson'.....	182	" 24.	" 25.	36 40		36 40
Str. 'Macassa'.....	529	" 26.	" 26.	102 90	5 00	107 90
Bge. 'Hiawatha'.....	518	" 27.	" 28.	101 80		101 80
" 'Burma'.....	885	" 28.	" 30.	200 45		200 45
Sch. 'Flora Calveth'.....	190	" 31.	Aug. 1.	38 00		38 00
Str. 'Argyle'.....	700	Aug. 3.	" 5.	169 09		169 09
Yacht 'Wave Crest'.....	63	" 5.	" 8.	60 00		60 00
Sch. 'Clara'.....	232	" 10.	" 12.	66 40		66 40
Str. Bge. 'Kenirving'.....	145	" 10.	" 12.	49 00		49 00
Str. 'City of New York'.....	292	" 20.	" 22.	78 84		78 84
" 'India'.....	976	" 22.	" 25.	250 08		250 08
" 'Ramona'.....	57	" 28.	" 29.	20 00		20 00
" 'Frontenac'.....	111	" 31.	Sept. 5.	102 20	5 00	107 20
" 'St. Joseph'.....	304	Sept. 7.	" 9.	103 36	10 50	113 86
Bge. 'Winnipeg'.....	681	" 10.	" 17.	380 29	6 00	386 29
Str. 'D. R. Van Allen'.....	318	Oct. 12.	Oct. 13.	85 86		85 86
Bge. 'Kildonan'.....	499	" 22.	" 24.	134 73		134 73
Tug 'J. H. Hackett'.....	117	" 26.	" 26.	23 40		23 40
Str. 'Business'.....	958	Nov. 3.	Nov. 6.	279 92	31 00	310 92
Bge. 'Montreal'.....	337	" 7.	" 7.	67 40		67 40
" 'Condor'.....	567	" 9.	" 10.	106 70		106 70
" 'Trenton'.....	100	" 10.	" 17.	130 00		130 00
" 'Dorchester'.....	375	" 17.	" 18.	75 00		75 00
Tug 'Frank D. Philips'.....	83					
Bge. 'John S. Parsons'.....	203	" 19.	" 20.	67 21	5 00	72 21
" 'Selkirk'.....	719	" 21.	" 21.	121 90		121 90
Str. 'Bickerdike'.....	1,515	" 22.	Jan. 12.	2,228 30	82 75	2,311 05
Bge. 'Ungava'.....	1,226	Jan. 15.	April 1.	750 00		750 00
Dge. 'Sir Richard'.....	125			750 00	54 20	804 20
Str. 'Bickerdike'.....		Entry Fee.		100 00		100 00
	24,415			10,317 69	376 15	10,693 84

EDW. T. SMITH,

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 7, 1909.

Collector of Public Works Revenue.

SESSIONAL PAPER No. 19

No. 12.—STATEMENT of Rents outstanding, uncollected, on March 31, 1909.

Name.	Place.	Street and No.	Amount.
			\$ cts.
A. Bureau & Freres	Ottawa.	Sussex Street, No. 550.	200 00
Harris Balon	"	" 486.	7 00
Le Temps Printing and Publishing Co.	"	" 552-554.	321 00
I. C. Pepin	"	" 390.	26 00
Wm. Charroa	"	" 460.	10 00
Noe Brunet	"	" 392.	13 00
Mrs. J. Hyland	"	" 408.	3 00
Frank Bertrand	"	" 488.	7 00
Edward Pagé	"	" 540.	65 00
L. F. M. Globensky	"	" 374.	72 00
A. Perrault	"	" 414.	17 00
A. d'Amour	"	" 546-548.	40 00
McCormic Manufacturing Co.	"	" 498-500.	50 00
Janvier Carisse	"	" 460.	9 00
Mrs. F. Rogers	"	" Rear 494.	39 00
Mrs. Hickey	"	McKenzie Ave. 36.	50 00
Mrs. Dionne	"	" 37.	10 00
V. Belanger	"	" 36.	34 00
Mrs. Desrosiers	"	" 38.	60 00
Mrs. Cuzner	"	" 20.	20 00
F. McDougall	"	" 40.	60 00
Mrs. Archambault	"	St. Patrick St. 106.	17 50
Miss Guilmont	"	" 109.	18 00
J. Demoulin	"	" 117.	15 00
Jean Nastorg	Montreal.	St. Catherine, E. 802.	3 00
Mme. Jasmin	"	" 804.	18 00
			1,184 50

EDW. T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, June 2, 1909.

PART VII

MISCELLANEOUS

CONTRACTS LET BY THIS DEPARTMENT.

PROPERTY PURCHASED OR SOLD.

PROPERTY, LEASED TO OR BY THE DEPARTMENT.

CURATOR'S REPORT, NATIONAL ART GALLERY.

NAMES OF CHIEF OFFICERS OF THE DEPARTMENT.

NAMES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.

NAMES OF PERSONS EMPLOYED ON GRAVING DOCKS.

NAMES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC BUILDINGS.

AND THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT.

FOR THE

FISCAL YEAR ENDED MARCH 31, 1909

DEPARTMENT OF PUBLIC WORKS OF CANADA,

LAW CLERK'S OFFICE,

OTTAWA, July 2, 1909.

SIR,—I beg to transmit to you herewith inclosed the following statements, concerning the transactions of the department, from April 1, 1908, to March 31, 1909, with respect to contracts and properties, and which are required for insertion in the annual report for the period above-mentioned, viz.:—

No. 1. Statement of contracts let by this department, from April 1, 1908, to March 31, 1909.

No. 2. Statement of property purchased and sold by the said department during the same period.

No. 3. Statement of property leased to and by the said department during the same period.

No. 4. A list of some of the public Acts of the Parliament of Canada, passed at the last session and having reference to the department.

I have the honour to be, sir,
Your obedient servant,

J. A. CHASSE,
Law Clerk.

NAPOLÉON TESSIER, Esq.,
Secretary, Department of Public Works.
Ottawa, Ont.

STATEMENTS

SHOWING

1ST.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM APRIL 1, 1908, TO MARCH 31, 1909.

2ND.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1909.

3RD.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1909.

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, from April 1, 1908, to March 31, 1909.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS.			- \$ cts.
<i>Nova Scotia.</i>			
Amherst, Post Office. Supply of coal.	J. H. Hewson	Sept. 23, 1908.	307 31
" Public Building. Tower clock.	Gillett & Johnston	Jan. 27, 1909.	1,600 00
" " New boiler.	Robb Engineering Co., Ltd	Sept. 25, 1908.	730 00
Annapolis, Post Office. Supply of coal.	Geo. B. Hurdwick	" 14, 1908.	205 22
Antigonish " " "	James Kenna.	Oct. 5, 1908.	199 02
Arichat " " "	J. LeBlanc, Terrio & Cie.	Sept. 21, 1908.	181 25
Baddeck " " "	McKay & McKaskill Co.	" 12, 1908.	207 00
Bridgewater " " "	James Kenna.	Oct. 5, 1908.	186 75
" Public Building. Heating apparatus.	Frank Powers.	Aug. 28, 1908.	950 00
" " Wiring and fittings.	L. C. Gilling.	June 25, 1908.	685 00
" " Striking tower clock.	Birks & Sons.	Feb. 5, 1909.	3,462 00
Canso, Construction of outhouse.	B. L. Redding.	" 16, 1909.	350 00
" Post Office. Supply of coal.	A. N. Whitman & Son.	Sept. 12, 1908.	314 10
Dartmouth " " "	Acadia Coal Co.	" 22, 1908.	143 18
Digby " " "	F. Robinson.	" 29, 1908.	275 00
Guysborough, Post Office " " "	C. S. Strophe.	" 30, 1908.	150 82
" " Tower clock.	W. H. Buckley.	Nov. 21, 1908.	1,050 00
Halifax, Custom House. Passenger elevator.	Otis Fensom Elevator Co., Ltd.	June 20, 1908.	7,800 00
" Post Office. Alterations.	W. E. Keefe.	July 18, 1908.	94,000 00
" Asst. Rec. Gen'l's Office. Supply of coal.	S. Cunard & Co.	Sept. 23, 1908.	42 00
" New Custom House " "	Acadia Coal Co.	" 14, 1908.	456 03
" Asst. Rec. Gen'l's Office. " "	"	" 14, 1908.	37 35
" Immigration Building " "	"	" 14, 1908.	450 79
" Detention Hospital " "	"	" 14, 1908.	445 30
" Examining Warehouse " "	"	" 14, 1908.	208 59
Inverness, Post Office. Supply of coal.	Inverness Ry. & Coal Co.	Oct. 12, 1908.	20 15
" Public Building. Wiring and fixtures.	A. Kennedy.	Apr. 1, 1908.	700 00
Kentville " Supply of coal.	P. E. Lloyd.	Sept. 12, 1908.	250 00
Liverpool, Post Office. Supply of coal.	L. W. Drew.	" 25, 1908.	175 00
Lunenburg " " "	John B. Young.	" 18, 1908.	199 50
" Public Building. Tower clock.	C. G. Schulze.	" 14, 1908.	1,600 00
New Glasgow " Alterations.	R. L. Olding.	Oct. 14, 1908.	1,495 00
" " Electric wiring and fittings.	P. E. Marchand & Co.	Feb. 15, 1909.	775 00
North Sydney, Post Office. Supply of coal.	The Mackay Mining Co.	Dec. 3, 1908.	255 00
Pictou, Custom House " "	The Intercolonial Coal Mining Co.	Sept. 14, 1908.	405 93
" Post Office " "	"	" 14, 1908.	412 23
Shelburne, Public Building. Heating apparatus.	F. Powers.	Oct. 20, 1908.	1,245 00
" " Electric wiring.	W. A. Mackay & Co.	July 21, 1908.	845 00
Springfield, Post Office. Supply of coal.	The Cumberland Railway & Coal Co.	Sept. 18, 1908.	222 80
Sydney " " "	"	" 14, 1908.	229 13
Sydney Mines " " "	Hugh G. Campbell.	Oct. 15, 1908.	192 50
Truro " " "	Acadia Coal Co.	Sept. 14, 1908.	141 25
" Armoury. Electric light wiring, &c.	P. E. Marchand & Co.	July 13, 1908.	495 00
" " Supply of electric energy.	Chambers' Elec. Light & Power Co.	Aug. 29, 1908.	per 1,000 k. hrs. 0 10
Westville, Post Office. Supply of coal.	The Intercolonial Coal Mining Co.	Sept. 14, 1908.	262 31
" Public Building. Heating apparatus.	E. F. Munro.	July 22, 1908.	995 00
" " Interior fittings.	Oshawa Interior Fitting Co.	Mar. 16, 1909.	969 00
Windsor " Supply of coal.	Fred. W. Dimock.	Sept. 24, 1908.	283 74
Yarmouth " " "	L. E. Baker & Co.	" 16, 1908.	92 25
" " Tower clock.	Smith & Sons.	June 27, 1908.	1,300 00
<i>Prince Edward Island.</i>			
Charlottetown, Public Building. Works to.	Bruce Stewart & Co.	Aug. 31, 1908.	705 00
" Dom. Building. Supply of coal.	A. Pickard & Co.	Sept. 8, 1908.	739 22

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
Quebec— <i>Continued.</i>			
Joliette, Armoury, construction of an.....	Simoneau & Dion.....	Feb. 15, 1909.	13,500 00
Knowlton. Construction of a post office.....	".....	June 22, 1908.	16,150 00
" Public Building. Heating apparatus.....	R. McLaren.....	Oct. 30, 1908.	1,100 00
Knowlton, Public Building. Electric fittings.....	N. Simoneau.....	Sept. 22, 1908.	1,000 00
Lachine, Post Office. Supply of coal.....	Joseph Allard.....	" 28, 1908.	102 72
Lachute " " ".....	R. Creswell.....	Oct. 8, 1908.	240 00
" " Heating apparatus.....	O. B. LaFleur & Son.....	Sept. 11, 1908.	1,050 00
" Public Building. Electric wiring.....	".....	Oct. 16, 1908.	650 00
" " Supply of electric current.....	Electric Light Company of Lachute.....	Jan. 5, 1909.	lamp per annum. 7 00
Laprairie, Post Office. Supply of coal.....	H. Brossard.....	Sept. 17, 1908.	152 70
L'Assomption " " ".....	Louis Desmarais.....	" 19, 1908.	212 50
Lévis " " ".....	Robitaille & Co.....	" 21, 1908.	395 78
Longueuil " " ".....	D. Brissette.....	" 15, 1908.	155 06
Magog, Public Building. Construction of.....	R. Cameron.....	May 27, 1908.	19,940 00
" " Electric light equipment.....	P. E. Marchand & Co.....	Sept. 11, 1908.	877 00
" " Heating apparatus.....	Albert Beauchesne.....	Oct. 3, 1908.	1,800 00
" " Interior fittings.....	R. Cameron.....	Mar. 10, 1909.	2,900 00
Montmagny, Post Office. Supply of coal.....	The Archer Co., Limited.....	Oct. 22, 1908.	224 41
Montreal " " ".....	L. Cohen & Son.....	Jan. 4, 1909.	910 58
" Immigration Office ".....	Joseph Elie.....	Sept. 21, 1908.	165 68
" Custom House ".....	M. M. Trudeau & Frère.....	" 24, 1908.	1,059 18
" Ex'g. Warehouse ".....	J. C. Macdiarmid.....	" 30, 1908.	1,150 00
" Custom House ".....	L. Cohen & Son.....	Jan. 4, 1909.	
" Revenue Building ".....	".....	" 4, 1909.	292 50
" Cust. Exp. Parcels Office. Fitting up.....	Jos. Côté.....	Aug. 7, 1908.	2,500 00
" Postal Station "C." Electric wiring.....	J. O. Gagnon.....	Sept. 5, 1908.	425 00
" " "B." fixtures.....	A. Simoneau.....	" 21, 1908.	350 00
" Custom House. Mezzanine floor.....	J. B. Gratton.....	Oct. 5, 1908.	4,144 00
" Post Office. Addition to; heating apparatus.....	Peter Lyall & Sons.....	" 22, 1908.	18,407 00
" Customs Parcels Office. Roof, etc.....	Jos. Côté.....	" 16, 1908.	1,350 00
" Post Office. Removal of snow.....	A. C. St. Amour.....	Nov. 25, 1908.	185 00
" Cust. Parcels Office. Heating apparatus.....	Jos. Thibault.....	Dec. 19, 1908.	2,600 00
" Cust. Express Office. New lavatories.....	".....	" 22, 1908.	1,175 00
" Post Office Building. Steam heating service.....	Montreal Light, Heat & Power Co.....	Jan. 8, 1909.	Schedule of rates.
" " " New addition; changes.....	Peter Lyall & Sons.....	Mar. 3, 1909.	1,420 00
" Custom House. Painting.....	N. G. Valiquette.....	" 9, 1909.	794 02
" " Cupboards.....	J. B. Gratton.....	" 9, 1909.	632 00
Nicolet, Public Building. Tower clock.....	J. O'Shaughnessey.....	" 23, 1909.	400 00
" Post Office. Supply of coal.....	Hamilton Lacerte.....	Sept. 22, 1908.	221 50
Plessisville, Public Building. Construction of.....	Paquet & Godbout.....	Dec. 11, 1908.	14,000 00
Point St. Charles, Postal Station "D." Construction of.....	Morssen & Co.....	" 2, 1908.	31,600 00
Quebec, Post Office. Alterations to.....	Jobin & Paquet.....	June 19, 1908.	832 10
" Citadel. Addition to Gov.-Gen.'s quarters.....	Achille Dugal.....	May 9, 1908.	6,809 00
" Post Office. Elevator.....	Otis-Fensom Elevator Co., Limited.....	Oct. 3, 1908.	7,600 00
" Louise Embankment. Immigration building.....	Canadian Pacific Ry. Co.....		11,649 00
" Drill Shed. School of gunnery.....	P. T. C. Dumais and L. Lachance.....	Nov. 26, 1908.	45,895 00
" Military Store Building. Freight elevator.....	Otis-Fensom Elevator Co., Limited.....	Jan. 16, 1909.	2,900 00
" Post Office. Works to electric elevator.....	David Larose.....	" 30, 1909.	1,490 00
(St. Roch) Construction of a Post Office.....	Jinchereau & Lamonde.....	Feb. 6, 1909.	47 711 00

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
<i>Quebec—Continued.</i>			
Quebec, Arsenal. Metal fittings	Office Specialty Co.	Dec. 10, 1908.	2,218 00
" Cullers' Office. Supply of coal.	N. Madden & Son.	Sept. 21, 1908.	356 05
" Custom House "	" "	" 21, 1908.	963 59
" Marine Agency "	" "	" 21, 1908.	
" Exam'g Warehouse "	" "	" 21, 1908.	1,368 46
" Immigration Office "	" "	" 21, 1908.	524 44
" Immigration Hospital (Trachoma). Supply of coal.	" "	" 21, 1908.	1,254 22
" Post Office. Supply of coal	" "	" 21, 1908.	867 92
" Gov.-Genl.'s Quarters. Supply of coal	" "	" 21, 1908.	717 75
" (St. Roch) Post Office "	" "	" 21, 1908.	56 95
" Weights and Measures Office "	" "	" 21, 1908.	766 60
Richmond, Public Building. Tower clock.	R. Rattray.	Feb. 4, 1909.	3,300 00
" Post Office. Supply of coal.	J. A. Smith.	Sept. 15, 1908.	221 11
Rimouski, Post Office. Supply of coal.	H. G. Lepage.	" 18, 1908.	263 20
" Public Building. Repairs.	J. A. Talbot.	Aug. 18, 1908.	1,322 90
St. Eustache, Post Office. Fittings.	Geo. Bradley.	May 4, 1908.	648 00
St. Henri " Supply of coal.	Joseph Elie.	Sept. 21, 1908.	204 69
St. Hyacinthe " Works to.	Nap. Lavoie.	June 26, 1908.	325 00
" " Inland Revenue. Supply of coal.	Anthime Cadorette.	Sept. 24, 1908.	141 02
" Custom House. Repairs to pipe.	Jos. Huette.	Oct. 8, 1908.	300 00
" Public Building. Galvanized iron roof.	" "	Feb. 13, 1909.	1,177 80
St. Jérôme, Post Office. Supply of coal.	S. G. Laviolette.	Sept. 16, 1908.	254 58
St. Johns " "	Jules Audette.	" 14, 1908.	
" Cavalry Stables. Sheeting and painting.	A. Saurette.	April 21, 1908.	1,500 00
" Post Office. Heating apparatus.	G. Monbleau.	July 28, 1908.	1,300 00
" Cavalry Stables "	A. Saurette.	Dec. 14, 1908.	200 00
" Public Building. Electric wiring.	Scott & Rubenstein.	" 21, 1908.	720 00
" Post Office. Interior fittings.	J. T. Schell.	Jan. 1, 1909.	1,303 00
" Cavalry Stables. Electric wiring.	A. Papineau.	Mar. 8, 1909.	525 00
St. Louis du Mile End, Public Building. Concrete wall.	Latreille & Latreille.	June 25, 1908.	500 00
" Public Building. Interior fittings.	Bourassa & Son.	Sept. 3, 1908.	680 00
" Post Office. Supply of coal.	J. C. McDiamid.	" 30, 1908.	171 51
Sherbrooke, Post Office. Supply of coal.	La Cie Coderre & Fils.	" 18, 1908.	424 37
" Drill Hall. Heating apparatus.	Simoneau & Dion.	Nov. 16, 1908.	3,550 00
" " Electric wiring.	A. E. Choquette.	Dec. 28, 1908.	1,985 00
Sorel, Post Office. Supply of coal.	Alfred Lavallée.	Sept. 19, 1908.	357 00
" " Additional fittings.	Joseph Cardin.	July 18, 1908.	500 00
Terrebonne, Post Office. Supply of coal.	J. O. Duguay.	Sept. 16, 1908.	111 00
Thetford Mines, Post Office. Supply of coal.	Joseph Elie.	" 21, 1908.	230 39
Three Rivers, Temporary Post Office. Fittings.	Vivian Burrill.	Nov. 17, 1908.	1,850 00
" Post Office and Custom House. Supply of coal.	Geo. Leprohon.	Sept. 21, 1908.	584 26
Valleyfield, Post Office. Supply of coal.	Besner & Chasle.	" 17, 1908.	338 18
Victoriaville " "	Octave Gaudet.	" 15, 1908.	114 04
<i>Ontario.</i>			
Alexandria, Post Office. Supply of coal.	Angus McDonald & Son.	Sept. 19, 1908.	263 07
Almonte " "	Taylor Brothers, Ltd.	" 17, 1908.	179 62
Amherstburg " "	John Fraser.	" 22, 1908.	182 00
Arnprior, Public Building. Doorway to entrance.	James Lesarge.	" 14, 1908.	850 00
Barrie, Post Office. Supply of coal.	J. G. Scott.	" 19, 1908.	241 50
Belleville " "	The Schuter Company.	" 19, 1908.	280 95
" Drill Hall. Addition, &c.	Wm. Stuart.	Apr. 27, 1908.	8,100 00
" " Electric wiring.	" "	June 2, 1908.	2,987 00
" " Heating apparatus.	" "	Aug. 17, 1908.	3,595 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
Ontario— <i>Continued.</i>			
Belleville Drill Hall. Sodding and grading.....	Wm. Stuart.....	Sept. 21, 1908.	1,175 64
" " Concrete sidewalks.....	".....	Oct. 15, 1908.	1,703 70
" " Bowling alleys (2).....	Ketchum & Co.....	Feb. 3, 1909.	1,050 00
" " Interior fittings.....	The Pringle Co.....	" 18, 1909.	1,369 00
Berlin, Post Office. Supply of coal.....	Klepfer Coal Co.....	Sept. 21, 1908.	280 95
" " Tower clock.....	The Arthur Pequegnat Clock Co.....	Oct. 7, 1908.	1,627 00
Bowmanville " Supply of coal.....	McClellan & Co., Ltd.....	Sept. 18, 1908.	168 75
Brampton " ".....	Daniel Pratthey.....	" 24, 1908.	202 50
Brantford " ".....	The Wilson Coal Co.....	" 19, 1908.	207 84
Bridgeburg " ".....	Isaac White.....	" 26, 1908.	180 00
Brockville " ".....	The Central Canada Coal Co., Ltd.....	Aug. 21, 1908.	414 40
" Customs Office. Alterations to.....	J. S. Mix.....	Sept. 30, 1908.	467 00
Chatham, Post Office. Supply of coal.....	A. R. Crow.....	" 21, 1908.	218 52
Clinton " ".....	James Hamilton.....	" 22, 1908.	19 87
Cobourg " ".....	The Estate of Jno. Duncan.....	Oct. 14, 1908.	237 50
Deseronto " ".....	The Rathbun Co.....	Sept. 23, 1908.	276 00
Dundas " ".....	Chas. Sturrock.....	" 17, 1908.	45 05
Durham, Armoury. Construction of.....	Hugh McDonald.....	Oct. 2, 1908.	6,000 00
Fort William, Post Office. Supply of coal.....	James Murphy.....	Sept. 21, 1908.	442 25
" " Additions to, &c.....	Chas. H. Sherwood.....	Nov. 19, 1908.	7,450 00
Galt " Supply of coal.....	A. J. Colvin.....	Sept. 18, 1908.	299 92
Gananoque, Post Office and Customs House. Supply of coal.....	Cowan & Britton.....	" 19, 1908.	257 83
" Public Building. Granolithic sidewalks.....	T. Dolan & Son.....	July 17, 1908.	sq. ft. 0 23
Glencoe, Public Building. Construction of.....	Geo. A. Proctor.....	Sept. 11, 1908.	16,238 00
Goderich " Supply of coal.....	Wm. Lee.....	Oct. 31, 1908.	251 92
Guelph " ".....	Klepfer Coal Co.....	Sept. 19, 1908.	321 70
" " Storey to Gun shed at Armoury.....	Nagle & Mills.....	Apr. 28, 1908.	34,925 00
" Armoury. Electric wiring.....	".....	Oct. 16, 1908.	511 00
" " Bowling alleys.....	Ketchum & Co.....	Feb. 17, 1909.	1,050 00
" Drill Hall, Addition. Heating apparatus.....	Stevenson & Malcolm.....	" 17, 1909.	2,250 00
Hamilton, Post Office. Supply of coal.....	The Murlon Coal Co.....	Sept. 19, 1908.	1,024 83
" Custom House, long room. Grills, counters, &c.....	Newbigging Cabinet.....	Apr. 18, 1908.	2,610 00
" Public Building. Lighting of Tower clock.....	Hamilton Gas Light Co.....	" 16, 1908.	per an. 125 00
" Armoury. Installation of gas system.....	".....	May 22, 1908.	4,340 00
" Public Building. Electric wiring.....	The Electric Supply Co.....	July 31, 1908.	1,340 00
" New Armoury. Heating system.....	W. J. Walsh.....	Aug. 21, 1908.	12,880 00
" " Electric wiring.....	Culley & Breay.....	" 24, 1908.	3,525 00
" " Bowling alleys.....	Ketchum & Co.....	Oct. 9, 1908.	4,850 00
" " Interior fittings.....	The Burton & Baldwin Mfg. Co., Ltd.....	" 13, 1908.	10,760 00
" " Supply of gas, &c.....	The Electric Supply Co.....	Nov. 14, 1908.	2,471 00
" Post Office. Alterations to.....	Drake, Avery Co.....	Mar. 9, 1909.	2,304 00
Hawkesbury " Supply of coal.....	E. A. Hall.....	Sept. 18, 1908.	49 81
Ingersoll " ".....	W. Ross.....	" 19, 1908.	265 80
Kenora " ".....	Windatt & Co.....	" 24, 1908.	217 35
Kingston, Inland Revenue Building. Supply of coal.....	P. Walsh.....	" 18, 1908.	508 00
" Gun shed and wagon. Construction of.....	W. J. Chapman.....	July 28, 1908.	3,475 00
" R. M. C. Servants' Quarters. Wiring.....	J. Halliday.....	Aug. 31, 1908.	3,350 00
" " Subordinate Officer's Quarters. Heating apparatus.....	M. Sullivan.....	Sept. 8, 1908.	2,750 00
" " Quarters for stables establishment.....	".....	Jan. 27, 1909.	9,490 00
" Post Office. Steel case in Inspectors' Office.....	Office Specialty Mfg. Co., Ltd.....	Mar. 20, 1909.	875 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
<i>Ontario.</i>			
Ottawa, Dept. of Justice. Docket Room Steel Cabinet.....	Eclipse Mfg. Co., Ltd.....	Oct. 28, 1908.	507 40
" Clerk, Crown in Chancery. Steel cases.....	" " ".....	Aug. 1, 1908.	4,955 00
" Langevin Block, Int. Dept. Desks.....	" " ".....	Jan. 14, 1909.	492 00
" " " Steel filing cases.....	" " ".....	Dec. 14, 1908.	2,625 00
" West Block, Rys. & Canals Dept. Steel Office desks.....	Office Specialty Mfg. Co., Ltd.....	" 16, 1908.	1,480 00
" " Electric passenger elevator.....	Otis-Fensom Elevator Co., Ltd.....	" 22, 1908.	6,800 00
" House of Commons. Silverware.....	A. Rosenthal & Sons.....	Jan. 5, 1909.	526 08
" Exp. Farm Museum and Offices. Electric wiring, &c.....	R. Anderson.....	" 23, 1909.	906 00
" Parlt. Buildings. New Addition. Electric light fixtures.....	John Ferman.....	Feb. 1, 1909.	2,380 00
" Exp. Farm. Residence for Chief Astronomer.....	Doran & Devlin.....	" 25, 1909.	12,300 00
" House of Commons. Chair for Speaker.....	The Valley Seating Co.....	" 18, 1909.	500 00
" Post Office. Fire escapes.....	The Capital Scale Brass & Iron Foundry Co., Ltd.....	Mar. 31, 1908.	498 00
Owen Sound, Post Office. Supply of coal.....	J. K. McLachlan.....	Oct. 12, 1908.	312 75
" " Additional story.....	Nagle & Mills.....	June 13, 1908.	3,950 00
" " Heating apparatus.....	J. A. McCorkindale.....	Feb. 25, 1909.	1,600 00
Paris, Post Office. Supply of coal.....	Geo. E. Taylor.....	Sept. 22, 1908.	140 13
Peterborough, Post Office and Custom House. Supply of coal.....	The Peterboro' Fuel & Cartage Co.....	" 21, 1908.	477 33
" " Drill Hall. Heating apparatus.....	Bennett & Wright Co., Ltd.....	" 9, 1908.	5,124 00
" " Armoury. Electric lighting.....	F. R. I. MacPherson & Co.....	Aug. 27, 1908.	3,350 00
Petrolia, Post Office. Supply of coal.....	The Parker Coal Co.....	Sept. 22, 1908.	166 41
Pictou, Post Office. ".....	Nelson Ostrander.....	" 19, 1908.	222 75
Port Arthur " ".....	Louis Walsh Coal Co.....	" 23, 1908.	392 00
" " Additional heating apparatus.....	Marshall & Lime.....	Oct. 19, 1908.	595 00
Port Hope " Supply of coal.....	J. M. Rosevear & Co.....	Nov. 13, 1908.	295 55
Prescott " and Cust. House. Supply of coal.....	James Buckley.....	Sept. 8, 1908.	341 00
Renfrew, Public Building. Construction of.....	Joseph Bourque & Co.....	April 6, 1908.	24,500 00
" " Wiring.....	Renfrew Electric Co.....	Oct. 12, 1908.	790 00
St. Mary's Post Office. Supply of coal.....	James Armstrong.....	" 2, 1908.	204 00
St. Thomas " ".....	M. Scarrow.....	Sept. 22, 1908.	250 00
Sandwich " ".....	J. K. Hurley.....	" 21, 1908.	63 50
" Custom House. Fittings.....	Joseph Major.....	April 4, 1908.	670 00
Sarnia, Post Office. Supply of coal.....	W. A. Brown.....	Oct. 8, 1908.	301 91
" " Alteration to screen.....	Geo. A. Proctor.....	Feb. 12, 1909.	655 00
Sault Ste. Marie, Post Office. Supply of coal.....	The Sault Ste. Marie Coal & Wood Co., Ltd.....	Sept. 19, 1908.	278 40
Simcoe, Public Building. Tile floor in vestibule and lobby.....	H. B. Donly.....	Jan. 26, 1909.	600 00
" " Heating apparatus.....	Paulin & Rutherford.....	Mar. 12, 1909.	775 00
" " Ceramic floor.....	Schultz Bros. Co., Ltd.....	" 25, 1909.	522 00
Smith's Falls, Post Office. Supply of coal.....	H. A. Crate.....	Sept. 21, 1908.	164 40
" " Interior fittings.....	The Berlin Interior Hardwood Co., Ltd.....	Mar. 15, 1909.	1,225 00
Stratford " Supply of coal.....	J. Schneider.....	Sept. 17, 1908.	360 60
Strathroy " ".....	Alex. Reid.....	" 18, 1908.	194 10
" " Armoury. Wiring.....	H. C. Brittain.....	July 17, 1908.	750 00
" " Heating apparatus.....	J. Robertson & Son.....	Aug. 31, 1908.	1,215 00
" " Interior fittings.....	J. W. Murray.....	Feb. 2, 1909.	455 00
Toronto, Post Office. Wiring and fixtures.....	The Keith & Fitzsimons Co., Ltd.....	July 17, 1908.	1,088 00
" " " ".....	Bennet & Wright Co., Ltd.....	Aug. 10, 1908.	1,050 00
" General Post Office. " Freight elevator.....	Otis-Fensom Elevator Co., Ltd.....	Sept. 1, 1908.	1,768 00

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c. —*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS— <i>Continued.</i>			\$ cts.
Ontario— <i>Continued.</i>			
Toronto, Magazine. Construction of.....	H. C. Baker & A. Jordahl	Sept. 14, 1908.	3,467 00
" Observatory. Addition to tower.....	Brown & Love	" 21, 1908.	2,530 00
" " Steel dome.....	The Warner & Swasey Co.	Mar. 29, 1909.	3,565 00
" Public Building. Electric energy.....	Toronto Elect. Light Co., Ltd.	" 1, 1909.	*0 20
" Custom House. Supply of coal.....	F. H. Ferguson.....	Nov. 19, 1908.	
" Ex'g. Warehouse ".....	"	" 19, 1908.	18 01
" Revenue Office ".....	"	" 19, 1908.	22 15
" Junction Post Office ".....	The Connell Anthracite Mining Co.....	Sept. 22, 1908.	
" Custom House ".....	"	" 22, 1908.	742 18
" Ex'g. Warehouse ".....	"	" 22, 1908.	1,161 84
" Post Office and Revenue Office. Supply of coal.....	"	" 22, 1908.	1,415 00
Trenton, Post Office. Supply of coal.....	T. H. Gothard.....	" 18, 1908.	238 00
Walkerton ".....	Trail Bros.....	Oct. 12, 1908.	231 75
" Armour. Levelling ground.....	R. E. Truax.....	July 14, 1908.	1,210 00
Welland, Public Building. Construction of.....	Nagle & Mills.....	Sept. 16, 1908.	26,526 00
Whitby ".....	O. Gay & Son.....	Oct. 16, 1908.	22,000 00
Wingham, Post Office. Supply of coal.....	Richardson & Rae.....	Sept. 19, 1908.	241 98
Windsor ".....	F. X. Scully.....	" 21, 1908.	66 75
" ".....	J. T. Hurley.....	" 21, 1908.	366 00
Woodstock ".....	The McIntosh Coal Co.....	" 19, 1908.	305 17
" " Fittings.....	Chas. Schofield.....	Feb. 18, 1909.	316 00
Manitoba.			
Brandon, Exp. Farm and Post Office. Supply of coal.....	The Canadian Coal & Commission Co.....	Sept. 19, 1908.	991 27
" Exp. Farm and Immigration Building. Supply of coal.....	Robert Purdon & Co.....	Aug. 19, 1908.	265 05
" Public Building. Electric wiring.....	Star Electric Co.....	" 3, 1908.	991 00
" Armoury. Heating apparatus.....	The Brandon Heating and Plumbing Works.....	Sept. 22, 1908.	1,800 00
Dauphin, Post Office, &c. Construction of.....	Sam. Brown.....	Aug. 20, 1908.	20,330 00
Emerson ".....	"	Nov. 20, 1908.	23,500 00
Fort Osborne, Quarters for married men. Heating apparatus.....	James Ballantyne Co., Ltd.	Nov. 19, 1908.	2,170 00
" Officers and guard-room barracks furniture.....	Office Specialty Mfg. Co....	" 19, 1908.	957 47
Neepawa, Public Building. Electric light equipment.....	Neepawa Electric Co.....	Sept. 21, 1908.	750 00
" Public Building. Heating apparatus.....	A. G. Heys.....	Jan. 5, 1909.	2,000 00
" Post Office. Supply of coal.....	B. W. Boulton.....	Sept. 21, 1908.	540 00
Portage la Prairie, Public Building. Supply of coal.....	A. W. Humber.....	" 19, 1908.	605 21
" Public Building. Supply of coal.....	Windatt & Company.....	" 24, 1908.	
St. Boniface, Post Office. ".....	Harstone Bros.....	" 21, 1908.	
" " Fittings.....	Berlin Interior Harwood Co., Ltd.....	Oct. 3, 1908.	1,140 00
Selkirk, ".....	W. J. Trick.....	Jan. 26, 1909.	995 00
" " Supply of coal.....	Harstone Bros.....	Sept. 21, 1908.	285 29
Winnipeg, Examining Warehouse. Construction of.....	J. McDiarmid Co., Ltd....	Apr. 10, 1908.	276,900 00
" Fort Osborne Barracks. New drain.....	J. McDiarmid Co., Ltd....	Apr. 16, 1908.	2,085 00
" " New Guard-room. heating apparatus.....	The James Ballantyne Co., Ltd.....	May 21, 1908.	1,137 00
" Immigration Building. Beds.....	Modern Machine Co.....	Sept. 4, 1908.	3,800 00
" Postal Station "B." Fittings.....	Toronto-Waterloo Office Fixture Co., Ltd.....	Oct. 6, 1908.	2,146 00
" Post Office. Changes.....	Rat Portage Lumber Co....	Mar. 11, 1909.	1,177 05
" Fort Osborne Guard-room. Electric wiring.....	Shipman Electric Co.....	Aug. 28, 1908.	525 00

*Per 1,000 watts.

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
<i>Alberta—Continued.</i>			
Medicine Hat, Public Building. Gas piping.	Oakes & Eyraud.	June 22, 1908.	280 00
" Armory. Heating system.	James Rae.	Dec. 16, 1908.	866 50
" " Gas fixtures and lamps.	James Rae.	Mar. 1, 1909.	225 00
" Post Office. Fittings.	A. P. Burns.	" 13, 1909.	2,749 76
Red Deer, Land Title's Office. Plumbing, &c..	Standard Plumbing & Heat- ing Co., ...	Oct. 19, 1908.	735 00
" Court House. Supply of Water.	Corporation of Red Deer..	Nov. 2, 1908.	P. an. 29 00
Wainwright, Immigration Hall. Construction of.	W. P. McConnell.	Mar. 12, 1909.	2,200 00
<i>British Columbia</i>			
Columbia, Public Building. Electric wiring. . . .	Hawkins & Hayward. . . .	Oct. 20, 1908.	834 00
" " Heating apparatus.	Edward Hunt.	Nov. 24, 1908.	1,800 00
Fernie, " " " " " " " "	Whimster & Co.	Apr. 3, 1908.	2,278 49
" " Electric wiring, &c.	North West Electric Co., Ltd., ...	June 16, 1908.	1,200 00
Ladysmith, " Electric wiring, &c.	Hinton Electric Co.	Oct. 20, 1908.	838 00
Vancouver, " Two passenger ele- vators and one freight elevator.	Otis-Fensom Elevator Co., Ltd., ...	June 26, 1908.	20,400 00
" Public Building. Heating apparatus.	Leek & Co.	" 26, 1908.	10,974 00
" Post Office. Lobby-dado, &c.. . . .	Win. N. O'Neil & Co. . . .	Jan. 20, 1909.	1,894 50
" Public Building. Cement sidewalks.	Kelly Bros., Mitchell . . .	Mar. 9, 1909.	1,136 75
" Post Office. Electric light fixtures.	Robert Mitchell Co., Ltd., .	Nov. 18, 1908.	5,550 00
Victoria, " Alterations, &c.. . . .	Dinsdale & Malcolm	May 26, 1908.	14,257 00
" Detention Building. Electric wiring.	Hinton Electric Co.	Oct. 20, 1908.	2,052 00
" Immigration Building. Heating ap- paratus.	John Colbert.	Mar. 19, 1909.	3,392 00
HARBOURS AND RIVERS.			
<i>Nova Scotia.</i>			
Arisaig. Dredging.	Canada Construction & Dredging Co., Ltd.	Oct. 16, 1908.	Schedule.
Blue Rocks. Construction of breakwater.	Obed A. Ham	Jan. 11, 1909.	3,878 00
Cheticamp. Dredging.	The Dominion Dredging Co., Ltd., ...	July 27, 1908.	Schedule.
Country Harbour. Construction of warehouse.	W. E. Masson	June 11, 1908.	500 00
Cribbins Point. Dredging.	Canada Construction & Dredging Co., Ltd., ...	Oct. 16, 1908.	Schedule.
Digby. Construction of a spur pier.	J. E. & H. Bigelow	May 22, 1908.	17,900 00
" Dredging.	Maritime Dredging & Con- struction Co., Ltd., ...	Sept. 1, 1908.	Schedule.
Fawsons Cove. Dredging.	Canada Construction & Dredging Co., Ltd.	Oct. 16, 1908.	"
Fourchu, " " " " " " " "	" " " " " " " "	" 26, 1908.	"
Glace Bay. Road protection works.	Wm. Curry	April 23, 1908.	8,985 00
La Have River. Dredging.	The W. J. Poupore Co., Ltd	Aug. 4, 1908.	Schedule.
L'Archevéque, " " " " " " " "	Canada Construction & Dredging Co., Ltd.	Oct. 16, 1908.	"
Lunenburg, " " " " " " " "	The W. J. Poupore Co., Ltd	July 14, 1908.	"
Mabou, " " " " " " " "	The Dominion Dredging & Construction Co., Ltd., . .	" 27, 1908.	"
Mahone Bay, " " " " " " " "	The W. J. Poupore Co., Ltd	Aug. 25, 1908.	"
McKinnons Harbour " " " " " " " "	" " " " " " " "	" 4, 1908.	"
McPhersons Cove. Construction of a wharf. . . .	Reid & Archibald.	Sept. 19, 1908.	3,973 00
Minasville, " " " " " " " "	J. E. & H. Bigelow	Feb. 23, 1909.	7,975 00
Musier River. Dredging.	Beazley Bros.	Sept. 7, 1908.	Schedule.
North Sydney, " " " " " " " "	The W. J. Poupore Co., Ltd	Aug. 4, 1908.	"
Port Hastings. Wharf, ware-house and roadway (construction of)	W. J. Landry.	Sept. 28, 1908.	10,550 00

9-10 EDWARD VII., A. 1910

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Nova Scotia—Continued.</i>			.
Port Hawkesbury. Dredging	Beazley Bros.	Aug. 24, 1908.	Schedule.
Ship Harbour. "	"	Sept. 1, 1908.	"
Three Islands. "	The W. J. Poupore Co., Ltd	July 14, 1908.	"
Weymouth. "	Maritime Dredging & Construction Co.	Sept. 1, 1908.	"
Whitney Pier. Construction of a public wharf..	Wm. Dobson	Nov. 30, 1908.	9,980 00
Windsor. Hand dredging around govt. wharf..	Thos. A. Mosher	Aug. 25, 1908.	Schedule.
Yarmouth. Dredging	The Dominion Dredging Co., Ltd.	July 27, 1908.	"
<i>Prince Edward Island.</i>			
Naufragé Pond. Construction of a boat harb'r.	F. S. Macdonald	Feb. 2, 1909.	12,995 00
Souris. Supply of Stone for breakwater.	"	June 26, 1908.	P. c. yd. 3 49
Sturgeon. Extension and Repairs to wharf.	Neil Campbell	Dec. 21, 1908.	4,100 00
Vernon River. Construction of a public wharf (west side).	A. & W. Compton	" 7, 1908.	7,300 00
<i>New Brunswick.</i>			
Beaver Harbour. Construction of a pile wharf..	James E. Kane	Feb. 27, 1909.	8,808 00
Caraquet. Dredging	A. & R. Loggie	Aug. 17, 1908.	Schedule.
Church River "	P. England	June 6, 1908.	P. c. yd. 0 35
Campbellton. Construct'n of a deep water wharf	Wm. Glover	May 28, 1908.	35,475 00
Dalhousie. Dredging	A. & R. Loggie	Aug. 17, 1908.	Schedule.
Edmundston. Extension to breastwork	T. P. Charleson	May 20, 1908.	10,440 00
Gaspereaux River. Dredging	Maritime Dredging & Construction Co.	Nov. 6, 1908.	Schedule.
Harvey Bank. Extension to Dows wharf	O. & W. Downey	Dec. 21, 1908.	3,949 00
Loggieville. Dredging	A. & R. Loggie	Aug. 17, 1908.	Schedule.
Lorneville (Reeds Point). Combined breakwater and Wharf	James E. Kane	Feb. 10, 1909.	27,000 00
Lower Caraquet. Construction of a wharf.	Honoré Duguay	Mar. 17, 1909.	36,500 00
Maguapit Lake. Dredging	Maritime Dredging & Construction Co.	Aug. 14, 1908.	Schedule.
Miramichi. "	The W. J. Poupore Co., Ltd	" 25, 1908.	"
Miramichi River (near Barnabys Island). Dredg	Peter England	July 15, 1908.	"
Moncton. Extension to public wharf	A. F. Fawcett	" 8, 1908.	14,925 00
Oromocto Shoals. Dredging	Maritime Dredging & Construction Co.	Sept. 1, 1908.	Schedule.
Quaco. Dredging	"	" 1, 1908.	"
" Extension to east pier	T. P. Charleson & J. Burns	Dec. 28, 1908.	32,900 00
St. Andrews. Construction of a wharf	A. F. Fawcett	Mar. 8, 1909.	15,900 00
St. John Harbour. Dredging (core at end of 400 ft.).	G. S. Mayes	June 29, 1908.	Schedule.
St. John Harbour. Extension to wharf	D. C. Clark	Nov. 24, 1908.	287,633 00
" (Courtenay branch) Dredging	James S. Gregory	Feb. 8, 1909.	Schedule.
Seal Cove. Construction of a breakwater wharf.	E. R. Reid	Mar. 16, 1909.	29,000 00
Tabusintac. Dredging	P. England	May 20, 1908.	Per c. yd.
White Head (Grand Manan). Construction of wharf	J. E. Gaskill & L. E. Foster	Dec. 23, 1908.	b. meas. *37 4,850 00
York Point. Dredging	Maritime Dredging & Construction Co.	Feb. 23, 1909.	Schedule.
<i>Quebec.</i>			
Batiscan River. Dredging	Dufresne, Turcotte & Marchildon	Aug. 13, 1908.	Sch. of rate.
Bécancourt River. "	L. Cohen & Son	July 14, 1908.	"
Blanch Shoals. "	The T. F. Moore Co.	" 25, 1908.	"
Cap St. Ignace. Construction of wharf.	Cloutier & Gaudreau	Dec. 15, 1908.	14,913 00
Chateauguay River. Dredging	The Dominion Dredging Co., Ltd.	July 27, 1908.	Sch. of rate.
Châte à Blondeau. Landing pier (construct'n of)	Lafleur & Gravel	April 29, 1908.	6,560 00
Dorion. Dredging	L. Cohen & Son	July 14, 1908.	Schedule.

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

Works	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS—Continued.			\$ cts.
Quebec—Continued.			
Fraserville. Dredging.....	The W. J. Poupore Co., Ltd.	July 14, 1908.	Schedule.
Hay Island. ".....	L. Cohen & Son.....	" 8, 1908.	"
Hudson. ".....	The Canada Improvement Co.....	Aug. 10, 1908.	"
L'Assomption River. Dredging.....	The Dominion Dredging Co., Ltd.....	July 27, 1908.	"
Maskinongé River. ".....	L. Cohen & Son.....	" 14, 1908.	"
Matapedia. Proposed substructure h'way br'ge.....	T. P. Charleson & J. Burns	Oct. 27, 1908.	6,862 50
" Supply of structural steel for bridge.....	Phoenix Bridge Co.....	Dec. 16, 1908.	Schedule.
" Steel guard railing for h'way br'ge.....	Structural Steel Co., Ltd.	Feb. 23, 1909.	1,890 00
Notre Dame De LaSalette. Steamer 'Mildred,' service, etc.....	Geo. Bothwell.....	Aug. 21, 1908.	Schedule.
Nicolet. Dredging.....	The Canada Improvement Co.....	July 31, 1908.	"
Port St. Francis. Dredging.....	" " ".....	" 31, 1908.	"
Quebec Harbour. Extension to Wharf.....	Etienne Dussault & Co.....	Aug. 8, 1908.	743,976 19
" Wooden fenders to wharf.....	" " ".....	Oct. 14, 1908.	5,779 67
River Blanche. Extension block to head of pier.....	P. A. Parent.....	Dec. 18, 1908.	6,300 00
" du Loup. Dredging.....	The W. J. Poupore Co., Ltd.	July 14, 1908.	Schedule.
" Jesus. ".....	The Canada Improvement Co.....	Aug. 10, 1908.	"
" Onelle. ".....	" " ".....	" 31, 1908.	"
Roberval. Supply of fire-wood, Dredge 'Lac St. Jean'.....	F. X. Laroche.....	Feb. 19, 1909.	1,170 00
Roberval. Supply of fire-wood, Dredge 'Lac St. Jean'.....	Art. du Tremblay.....	Mar. 4, 1909.	175 00
St. Francis River. Dredging.....	The W. J. Poupore Co., Ltd.	July 14, 1908.	Schedule.
St. Ignace de Loyola. Sheathing to wharf.....	Eug. Patenaude.....	Aug. 11, 1908.	1,500 00
St. Maurice River. Dredging.....	Ant. St. Pierre.....	July 26, 1908.	Schedule.
St. Pierre les Becquets. Dredging.....	The Canada Improvement Company.....	Aug. 10, 1908.	Schedule of prices.
" " Landing Pier. Construction of.....	Eug. Patenaude.....	May 30, 1908.	7,456 00
St. Placide. Dredging.....	L. Cohen & Son.....	July 4, 1908.	Schedule.
Saguenay River. Dredging.....	The General Construction Company.....	Aug. 31, 1908.	"
Three Rivers. ".....	L. Cohen & Son.....	Oct. 1, 1908.	"
Vaudreuil. ".....	Dominion Dredging Co., Ltd.....	July 27, 1908.	"
Yamachiche. ".....	The W. J. Poupore Co., Ltd.	" 14, 1908.	"
Yamaska. ".....	" " ".....	" 14, 1908.	"
Ontario.			
Blind River. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	June 26, 1908.	"
Bowmanville. ".....	Frank Simpson.....	Sept. 10, 1908.	"
Burlington. ".....	W. E. Phin.....	July 16, 1908.	"
Burlington Channel. Hire of plant & repairs south pier.....	Joseph Battle.....	May 27, 1908.	per diem 65 00
Cheverie. Extension to wharf.....	H. MacAloney.....	Dec. 16, 1908.	4,295 00
Cobourg. Dredging.....	W. E. Phin.....	July 16, 1908.	Schedule.
" Two breakwaters in the harbour.....	The Randolph Macdonald Co., Ltd.....	Aug. 18, 1908.	139,000 00
Collingwood, Harbour. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	July 17, 1908.	Schedule.
Dark Channel. Dredging.....	R. Weddell & Co.....	June 26, 1908.	"
Goderich. ".....	W. L. Horton.....	Aug. 12, 1908.	"
Hamilton. ".....	" " ".....	July 16, 1908.	"
Jackfish Bay. ".....	The Great Lakes Dredging Co., Ltd.....	Oct. 9, 1908.	"
Kincardine. ".....	W. L. Horton.....	Aug. 12, 1908.	"

9-10 EDWARD VII., A. 1910

No. 1—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Name of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Ontario—Continued.</i>			
Kingston, River St. Lawrence. Improvements in the channel...	Frank Gilbert.....	Feb. 1, 1909.	"
Lion's Head. Extension to wharf.....	Kastner & Porter.....	" 16, 1909.	4,800 00
Little Current. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	June 26, 1908.	Schedule.
McGregors Creek. Extension 300 feet, sheet piling	John Flook.....	Oct. 10, 1908.	per ft. 13 50
McKellar River. Dredging.....	The Great Lakes Dredging Co., Ltd.....	July 14, 1908.	Schedule.
Meaford. ".....	R. Weddell & Co.....	June 26, 1908.	"
Midland. ".....	The Canadian Dredge & Cons. Co., Ltd.....	Aug. 21, 1908.	"
Mission River. " (Terminal Basin.)...	The Great Lakes Dredging Co., Ltd.....	Feb. 27, 1909.	"
Newcastle. Dredging.....	F. Simpson.....	Sept. 10, 1908.	Schedule of rate.
Nepigon River. ".....	Great Lakes Dredging Co., Ltd.....	Oct. 9 1908.	"
Owen Sound. ".....	A. F. Bowman.....	July 13, 1908.	"
Nigger Island. ".....	R. Weddell & Co.....	June 26, 1908.	"
Pelee Island. Extension to west wharf.....	A. McCormick & Son.....	Dec. 31, 1908.	4,800 00
Penetanguishene. Dredging.....	A. F. Bowman.....	July 13, 1908.	Schedule.
Picton. ".....	The Windsor Dredging Co., Ltd.....	Oct. 1, 1908.	4,200 00
" ".....	" ".....	Aug. 20, 1908.	Schedule of price.
Point Edward. ".....	Manley & Co.....	July 8, 1908.	"
Port Arthur. ".....	Great Lakes Dredging Co., Ltd.....	Dec. 8, 1908.	"
Port Burwell. ".....	Canada Construction & Dredging Co., Ltd.....	July 7, 1908.	"
Port Elgin. ".....	W. L. Horton.....	Aug. 12, 1908.	"
Port Stanley. Breakwater. Protection works.	Haney & Miller.....	Oct. 28, 1908.	2,100 00
" Construction of 6 groynes.....	J. H. Smale.....	Feb. 1, 1909.	6,535 00
Rondeau. Breakwater and dredging.....	Wm. Bermingham.....	Mar. 25, 1909.	229,000 00
" Dredging.....	Canada Construction & Dredging Co., Ltd.....	July 7, 1908.	Schedule.
Sand Point. Extension to public wharf.....	J. J. Fallon.....	Apr. 7, 1908.	2,030 00
Spanish River. Dredging.....	The C. S. Boone Dredging & Cons. Co., Ltd.....	Sept. 5, 1908.	Schedule.
Summerville. ".....	The Randolph Macdonald Co., Ltd.....	July 7, 1908.	"
Telegraph Island. ".....	R. Weddell & Co.....	June 26, 1908.	"
Thames River. ".....	Manley & Co.....	July 8, 1908.	"
" Approach to wharf.....	Chatham Dredging Co.....	" 8, 1908.	per cn. yd 12½
Thornbury. ".....	R. Weddell & Co.....	June 26, 1908.	Schedule.
Tiffin. ".....	Canadian Dredge & Cons. Co., Ltd.....	Aug. 4, 1908.	"
Toronto. ".....	The Windsor Dredging Co., Ltd.....	" 20, 1908.	"
" Harbour. New western entrance.....	R. Weddell & Co.....	May 15, 1908.	495,000 00
" Island. Extension to breakwater.....	F. R. Miller & R. Cumming	June 8, 1908.	39,000 00
Trenton Harbour. Dredging.....	R. Weddell & Co.....	" 26, 1908.	Schedule.
Victoria Harbour. ".....	Canadian Dredge & Construction Co., Ltd.....	Aug. 4, 1908.	"
Waukegan. ".....	Penetanguishene Dredging Co.....	" 28, 1908.	"
Warton. ".....	A. F. Bowman.....	July 13, 1908.	Schedule of price.
Wingfield. ".....	The C. S. Boone Dredging & Construction Co., Ltd.	June 26, 1908.	"
<i>Manitoba.</i>			
St. Andrews Rapids. Supply of cement.....	The Owen Sound Portland Cement Co., Ltd.....	May 26, 1908.	Per bag 0 61
" Movable dam steel service and highway bridge...	Canada Foundry Co., Ltd.	Sept. 10, 1908.	548,000 00
Lock. Red River. Gates.	J. Burns.....	Nov. 24, 1908.	32,970 00

SESSIONAL PAPER No. 19

No. 1—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

Works.	Name of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS— <i>Continued.</i>			\$ cts.
<i>Vessels, Dredges and Plant.</i>			
Construction of one small Fitzgibbon boiler for sounding scow.	Powers & Co	Apr. 8, 1908.	1,095 00
Construction of a steel hopper barge for dredge 'Sir Wilfrid.'	Collingwood Shipbuilding Co., Ltd.	May 4, 1908.	34,000 00
Construction of one steel tug	La Compagnie Pontbriand, Ltée.	" 22, 1908.	46,500 00
" "	New Burrill-Johnson Iron Co., Ltd.	June 10, 1908.	46,500 00
" of steel scow for pile driver	Beauchemin & Fils, Ltée.	July 14, 1908.	5,600 00
" of equipment for pile driver	Mussens, Ltd	" 14, 1908.	2,192 70
" Tug for Last Mountain Lake, Sask.	The Polson Iron Works, Ltd.	Aug. 25, 1908.	9,750 00
" Steel Tug	La Compagnie Pontbriand, Ltée.	Sept. 10, 1908.	46,500 00
" 2 Side hopper scows for Last Mountain Lake, Sask.	Burns & Waters	Oct. 5, 1908.	4,970 00
" of a wooden hull for dredge Last Mountain Lake, Sask.	"	" 8, 1908.	5,400 00
" Scotch Marine Return Tubular Boiler for dredge 'Industry.'	Polson Iron Works, Ltd.	Feb. 19, 1909.	9,300 00
" Double Cylinder engine for dredge No. 3.	Victoria Foundry Co.	" 22, 1909.	2,185 00
" Two hopper wooden dumping scows.	La Compagnie Pontbriand, Ltée.	Mar. 17, 1909.	5,590 00

9-10 EDWARD VII., A. 1910

No. 2—STATEMENT OF properties purchased or sold by the Department of Public Works of Canada, from April 1, 1908, to March 31, 1909.

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what Purpose.	Area.	Price.
1908.						\$ cts.
April	1 P. J. Mason and Geo. B. Murphy.	His Majesty.	Land at Tangier, N.S., (expropriation)	Approach to wharf.	9,000 sq. ft.	1 00
"	10 A. Marcis	"	Land at Cap St. Ignace, P.Q.	Right of way. Telep. connection.		250 00
"	11 Mutrie & Mutrie.	"	Land at Vernon, B.C., lot 50, block 62.	Site, Pub. Building.		2,500 00
"	15 Job R. Scudder, <i>et al.</i>	"	Land at Pelee Island, Ont., beach lots 3 & 4.	For wharf.		1,000 00
May	21 Susan McLaren	"	Land at Fort William, Ont., part of lot No. 6—Con. F.			
"	5 Mary F. McDonald, <i>et al.</i>	"	Island No. 1.	Improvements	0-23 acre.	172 50
"	5 Sam. O. Simons	"	Land at McGregors Creek, Ont., (Chatham)	For retaining wall.		(Grant.
"	6 E. V. Hessian.	"	Land at McGregors Creek, Ont., "	For retaining wall.		(Grant.
"	8 F. O. Lessard, <i>et al.</i>	"	Land at Georgetown, P.E. I.	Site Pub. Building.	60 x 50 ft.	2,500 00
"	11 H. J. McDonald	"	Land at St. Joachim, Que., part of lot 245.	For wharf.	101,875 ft.	100 00
"	21 M. Williams, <i>et al.</i>	"	Land at Humboldt, Sask., lots 1, 2, 3, block 3.	Site Pub. Building.		3,000 00
"	26 G. C. Beattie and J. H. King.	"	Land at Ostrea Lake, N.S.	Approach to wharf.	2,150 sq. ft.	20 00
June	8 H. N. Cockburn.	"	Land at Cranbrook, B.C. Lots 26, 27, 28. Block 89.	Site Pub. Building.		9,000 00
"	9 P. Crispo, <i>et al.</i>	"	Sale of 'Catherine C'.	Gov't. purpose.		4,000 00
"	18 E. G. Joly de Lothbinière, <i>et al.</i>	"	Land and wharf at Harbour au Bouche, N.S.	"	24,146 sq. ft.	2,500 00
"	24 Côté, Boivin & Côté.	"	Land at Ste. Cécile de Bic, P.Q.	For Gov't. wharf.	28,150 sq. ft.	350 00
"	29 D. & P. McKeller.	"	Land at Chicoutimi, Que.	"		3,000 00
July	4 Alf. Bellemare.	"	Land at Port William, Ont. Part of lot No. 6, Con. F.	Improvements.		174 00
"	7 T. Leunieux, <i>et al.</i>	"	Land at Canton Radnor, St. Jean des Piles, P.Q.	Gov't. slides & booms.	100 acre.	175 00
"	7 E. C. Perkins.	"	Land—Point Ste. Charles, Que., cadastral lot No. 936.	Site Pub. Building.	5,276 sq. ft.	6,331 20
"	23 Grand Trunk Ry. Co.	"	Land at Parkhill, Ont. Lot No. 6.	"	2,403 sq. ft.	3,556 25
"	24 C. Racine, <i>et al.</i>	"	Land—St. Joachim, Que. (Riv. Blondelle).	For wharf.	7,500 sq. ft.	(Grant.
"	29 Presbyterian Church of Lake Mégantic.	"	Land—Part of lots 18-78 and 18 79, Lake Mégantic, Q.		33,490 sq. ft.	50 00
Aug.	29 Chas. Sproule, <i>et al.</i>	"	Land—Litchfield, N.S.	Site Pub. Building.	64 x 132 ft	4,000 00
"	30 Episcopal Corporation of Gulf St. Lawrence.	"	Land—St. Roch de Quebec, cadastral lot No. 555-1	Right of way to wharf.	400 acre.	106 00
Sept.	1 Birmingham, Speers & Croche.	"	Land—Seven Islands, Que.	Site Pub. Building.	50 x 50 ft.	23,400 00
"	5 John Reid.	"	Bill of sale dredge 'Fruhling'.	Approach to road.	50 sq. ft	1 00
"		"	Land—Battleford, Sask. Lot 20.	Site Pub. Building.		3,000 00
"		"		Gov't. purposes.		250,000 00

SESSIONAL PAPER No. 19

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9-10 EDWARD VII., A. 1910

No 2.—STATEMENT of properties purchased or sold by the Department of Public Works of Canada, &c.—*Continued.*

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what Purpose.	Area.	Price.
1909.						\$ cts.
Jan.	23 Margaret Ogilvie, <i>et al.</i>	His Majesty	Land—Ottawa, Ont. Lot 39, 1st Concession.	Testing of fuel	.....	2,000 00
"	26 W. J. Long.	"	Land—Elmwood, Man. Lot 4.	Site Pub. Building	.....	1,500 00
"	27 W. H. Orr.	"	Land—Elmwood, Man. Lots 1, 2, 3.	"	.....	4,000 00
Feb.	27 James T. Johnson.	"	Land—St. André d'Argenteuil, Que.	For wharf	12,928 sq. ft.	400 00
"	22 M. A. & G. Robertson.	"	Land—Kothesay, N. B.	"	$\frac{9}{10}$ acre	2,000 00
"	27 Toronto Gen'l. Trust Corporation.	"	Land—Lakeport, Ont. Part of lot 1, Concession 'D'.	"	$\frac{56}{100}$ acre.	1,000 00
March	1 T. R. Anderson.	"	Land—Sackville, N. S.	"	.....	800 00
"	1 Anglican Diocese of Saskatchewan.	"	Land—At Prince Albert, Sask. Parts of river lots 55 & 56	Public Building	.....	15,477 50
"	12 His Majesty	H. Sanders and D. MacLachlan.	Land—At Marble Mountain, N. S.	Private enterprise.	Road 15 ft. wide, $\frac{1}{2}$ of acre	Free.
"	13 " "	R. McDonald.	Land—At Marble Mountain, N. S.	"	.....	1,200 00
"	15 L. Hutchinson.	His Majesty	Land—Uxbridge, Ont. Lot 4, block G.	Site, Pub. Building.	.....	3,000 00
"	18 Bank of Ottawa.	"	Land—Kemptville, Ont.	"	.....	4,000 00
"	18 J. C. Starr, <i>et al.</i>	"	Land—Wolfville, N. S.	"	.....	1,000 00
"	22 Methodist Church (Trustees)	"	Land—Essex, Ont. Lots 263, 265.	"	.....	700 00
"	24 Jas. and John Watt.	"	Land—Fergus, Ont. Village lot No. 1.	"	$\frac{36}{100}$ per. 26 sq. yds.	

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 2, 1909.J. A. CHASSÉ,
Law Clerk.

SESSIONAL PAPER No. 19

No. 3.—STATEMENT of Properties Leased to and by the Department of Public Works of Canada, from April 1, 1908, to March 31, 1909.

Date of Lease.	Lessors.	Lessees.	Property Leased.	For what Purpose.	Duration of Lease.	Annual Rental.
1908.						\$
April	1 His Majesty	Auguste Laplante, Canadian Fish and Transportation Co., Ltd.	Promises No. 452, Sussex street, Ottawa, Ont.	Private enterprise	Monthly tenancy	20 00 p. m.
"	2 "	"	Privilege to erect shed and pier on Government wharf at Blind River, Ont.	"	During pleasure.	1 00 for ever
"	16 Imperial Realty Co., Ltd.	His Majesty	"Canadian Building," eastern half of, Ottawa, Ont.	Auditor General and Interior Dept.	5 years	15,206 90 p. a.
"	25 His Majesty	Mrs. G. W. Edwards	Land at Junction street, Ottawa, Ont.	Private enterprise	During pleasure.	1 00 p. a.
"	25 J. N. Tice	His Majesty	Building at Stettler, Alta.	Lumber purposes	7 months	25 00 p. m.
"	27 Can. Pacific Ry. Co.	"	Site at Swift Current, Sask.	Lumber building	1 year	1 00 p. a.
"	29 His Majesty	Beloni Fournier	Land, Pond Creek, River Ottawa, Hull, Que.	Private enterprise	During pleasure.	1 50 p. a.
May	1 "	F. Bertrand	Premises No. 458, Sussex street, Ottawa, Ont.	"	Monthly tenancy	16 00 p. m.
"	1 J. A. Seybold	His Majesty	"Seybold Building," Sparks street, Ottawa, Ont.	Customs Dept.	5 years	16 00 p. m.
"	1 His Majesty	R. P. Blake	Premises No. 494, Sussex street, Ottawa, Ont.	Private enterprise	Monthly tenancy	6,500 00 p. a.
"	13 "	T. Aial and J. T. Dufresne	Land, Pond Creek, River Ottawa, Hull, Que.	"	Monthly tenancy	16 00 p. m.
"	13 Rodier Estate	His Majesty	Premises No. 306, St. Antoine street, Montreal, Que.	Detention Hospital.	During pleasure.	2 00 p. a.
"	29 Crédit Foncier Franco-Canadian.	"	Rooms, Edmonton, Alta.	"	1 year	2,000 00 p. a.
June	10 W. J. Mackerville.	"	Premises Nos. 357-359 Sussex street, Ottawa, Ont.	Post Office purposes.	"	852 00 p. a.
July	18 His Majesty	J. H. Ponsereau	Lands, St. Christopher Island, P.Q.	Geological Museum.	2 years	800 00 p. a.
"	23 Jas. Dickson	His Majesty	Right of way, Main à Dieu, N.S.	Mill purposes.	15 years	50 00 p. a.
"	29 His Majesty	J. Cariesse	Premises No. 460, Sussex street, Ottawa, Ont.	Govt. tel., repairs to.	During pleasure.	29 00 p. a.
"	29 "	Mrs. E. D. Gibson	Premises No. 485, " "	Private enterprise	Monthly tenancy	3 00 p. m.
Aug.	21 Joseph Lauzon	His Majesty	Right of way, Notre Dame de la Salotte, Que.	"	"	6 00 p. m.
Sept.	1 J. Osmont	"	Rooms, Indian Head, Sask.	Govt. purposes	1 year	50 00 p. a.
"	11 O. B. Lafleur and J. E. Valois	"	Rooms, Indian Head, Sask.	Distribution of trees.	3 years	300 00 p. a.
"	21 John C. Brennan.	"	Lachine, P.Q.: Privilege to connect drain pipe.	Govt. purposes	15 years	150 00 forever.
"	25 J. N. Tice	"	Rooms, "Trafalgar Building," Ottawa, Ont.	For C. S. C., &c	4 years, 7 mos.	5,700 00 p. a.
"	30 Mrs. Addie Sheehy.	"	Building at Stettler, Alta.	Lumber purposes.	9 months	25 00 p. m.
Oct.	15 His Majesty	Alp. Julien	Offices, Three Rivers, P.Q.	Govt. purposes	Monthly tenancy	25 00 p. m.
"	19 C. Jane Swales	His Majesty	Land at Pond Creek, Ottawa River, Hull, Que.	Private enterprise	During pleasure.	2 00 p. a.
"	3 Miss Barrett.	"	Premises at Hamilton, Ont.	For Post Office Dept.	5 years	840 00 p. a.
Dec.	"	"	Premises No. 716, Queen street E., Toronto, Ont.	Postal Station "Q."	Monthly tenancy	65 00 p. m.

9-10 EDWARD VII., A. 1910

No. 3.—STATEMENT OF Properties Leased to and by the Department of Public Works of Canada, &c.—Continued.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For with Purpose.	Duration of Lease.	Annual Rental.
1908.						\$
"	10 Copp, Clark Company.	His Majesty	Lot on Wellington Place, Toronto, Ont.	Storage of pneumatic tubes.	Monthly tenancy	15 00 p. m.
"	30 Can. Pacific Ry. Co.	"	Quarters for Chinese detention, Vancouver, B.C.		18 months	3,949 59 for whole period.
Feb.	13 A. Chatelain	"	Premises at L'Orignal, Ont.	Post Office	10 years	250 00 p. a.
Mar.	11 Can. Gen. Electric Co., Ltd.	"	Land at Toronto, Ont.	Govt. purposes	1 year	1 00
"	18 Geo. W. Abbott	"	Premises at Vegreville, Alta.	Immg. purposes	6 months.	40 00 p. m.
"	24 J. W. Hudson	"	Premises at Mortlach, Sask.	"	4 months.	40 00 p. m.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 2, 1909.

J. A. CHASSÉ,
Law Clerk.

LIST
OF SOME OF THE
ACTS OF PARLIAMENT
PASSED AT THE SESSION OF 1909
HAVING REFERENCE TO THE
DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE.

LIST of some of the Public Acts of the Parliament of the Dominion of Canada passed at the First Session of the Eleventh Parliament begun and holden at Ottawa, on the Twentieth day of January, 1909, and closed by Prorogation on the Nineteenth day of May, 1909, and having reference to the Public Works Department or works under its charge (8-9 Edward VII.)—

Subject.	Full Title of the Statutes.	Chapter	Page in Statute.
Sums granted to His Majesty for the financial years ending respectively March 31, 1909, and March 31, 1910, and the purposes for which they are granted.	An Act granting to His Majesty certain sums of money for the public service of the financial years ending respectively March 31, 1909, and March 31, 1910. The Appropriation Act No. 1..... The Appropriation Act No. 2.....	1 2	3 51

N.B.—By proclamation, dated June 19, 1908, amended rules and regulations were made for the management and working of the graving dock at Esquimalt, B.C. (*Vide Canada Gazette*, Vol. xlii., p. 64).

By proclamation, dated July 30, 1908, amended rules and regulations for the management and working of the dry dock at Levis, P.Q., were substituted for rules and regulations authorized by O. C., dated August 16, 1899. (*Vide Canada Gazette*, Vol. xlii., p. 317).

By proclamation, dated February 10, 1909, the tariff of tolls to be charged by the Rouge Boom Company, of Calumet, P.Q., for the use of their works during the season of 1909, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2458).

By proclamation, dated March 6, 1909, the tariff of tolls, proposed to be levied by the French River Boom Company, Limited, for the use of their works during the season of 1909, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2768).

By proclamation, dated March 13, 1909, the tariff of tolls proposed to be levied by the Upper Ottawa Improvement Company, Limited, for the use of their works during the season of 1904, was approved. (*Vide Canada Gazette*, Vol. xlii., p. 2695).

J. A. CHASSE,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 2, 1909.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED MARCH 31, 1909

NATIONAL ART GALLERY.

D. EWART, Esq., I.S.O.,
Chief Architect.

SIR,—I have the honour to report the following additions, by purchase, to the collection during the fiscal year ended March 31, 1909, viz.:—

OIL PAINTINGS.

Klaasje, by Curtis Williamson, R.C.A.	\$1,000
Landing of H.R.H. the Duke of Cornwall and York at Quebec, by John Hammond, R.C.A.	750
Mother and Son, by John Wentworth Russell.	1,500
Nut Gatherers in the Forest, by Homer Watson, R.C.A.	2,200
A Midsummer Night, by Archibald Browne.	700
Early Moonrise in September, by Wm. Brymner, P.R.C.A.	500
A Dutch Peasant, by J. Y. Beatty.	500
Le Quai des Grands Augustins, Paris, by J. W. Morrice.	500
Maison de pêcheurs au Tréport, by Henri Eugène LeSidaner.	500
Le Port d'Audierne (Bretagne), by Fernand LeGout-Gerard.	500
The Wayside Cross, by F. MacGillivray Knowles, R.C.A.	450
After Glow, by G. A. Reid, R.C.A.	400
Cap Tourmente, by Edmund Morris, A.R.C.A.	300
Nocturne, by Elizabeth MacGillivray Knowles.	250
Morning in Spain, by W. H. Clapp.	260
Kaulhaven Dordrecht, by S. Strickland Tully.	250
The Chess Problem, by Muriel C. W. Bolton.	200
Departure of Day, by Harry Britton.	200
A Muskoka Highway, by F. H. Brigden.	200
The First Snow, by Maurice Cullen, R.C.A.	150
A Little Puritan, by Franklin Brownell, R.C.A.	150
The Prospector, by Charles W. Jeffreys.	150
The Mill Race, by Mary E. Wrinch.	100
Rue du Canal, Moret sur Soing, by Clarence Gagnon.	100
Looking East, by Mary H. Reid, A.R.C.A.	100
Ombre et Lumière, by Charles Dagnac-Rivière.	90
Landscape, by J. L. Graham, A.R.C.A.	150

SCULPTURE.

Plaster Bust of DeMonts, by Hamilton MacCarthy, R.C.A.	250
Bronze—Indian Warrior, by A. Phinister Proctor.	910
Bronze—Prowling Panther, by A. Phinister Proctor.	325
Bronze—Standing Puma, by A. Phinister Proctor.	130

9-10 EDWARD VII., A. 1910

BLACK AND WHITE.

21 etchings, by Clarence Gagnon. \$261

DECORATIVE ART AND BOOK ILLUSTRATION.

Designs in mural decoration, wall paper and book illustration.
in colours and black and white, by Walter Crane. 511

During the fiscal year the number of visitors who registered was 10,596.

I have the honour to be, sir,
Your obedient servant,

WALTER R. BILLINGS,
Acting Curator N.A.G.

NAMES OF THE CHIEF OFFICERS
OF THE
DEPARTMENT OF PUBLIC WORKS
WITH
DATES OF APPOINTMENT, Etc., FROM 1841 TO 1909

NAMES OF THE CHIEF OFFICERS.

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1909.

Names.	Capacity or Office.	Date of Appointment.	
		Served.	
		From	To
<i>Under Statute 4-5 Vic., Chap. 38.</i>			
CORPORATION BOARD OF WORKS.			
Killaly, Hon. H. H.	Chairman		
Daly, Hon. D.	Members.	Dec. 29, 1841	Oct. 3, 1844
Harrison, S. B.			
Sullivan, R. B.			
Davidson, J., Esq.			
Begly, Thomas A.	Secretary	Aug. 17, 1841	
Keefer, Samuel	Chief Engineer.	" 17, 1841	
Rubidge, F. B.	Architect and Assistant Chief Engineer	Dec. 15, 1841	
NEW BOARD OF WORKS.			
Killaly, Hon. H. H.	Chairman		
Daly, Hon. D.	Members	Oct. 4, 1844	June 8, 1846
Draper, Hon. W. H.			
Morris, Hon. W.			
Papineau, Hon. D. B.			
<i>Under Statute 9th Vic., Cap. 37, &c.</i>			
Robinson, Hon. W. B.	Chief Commissioner.	June 22, 1846	March 10, 1848
Taché, Hon. E. P.	"	March 11, 1848	Nov. 26, 1849
Chabot, Hon. J.	"	Dec. 13, 1849	March 31, 1850
Merritt, Hon. W. H.	"	April 8, 1850	Feb. 11, 1851
Bourret, Hon. J.	"	Feb. 12, 1851	Oct. 27, 1851
Young, Hon. John.	"	Oct. 28, 1851	Sept. 22, 1852
Chabot, Hon. J.	"	Sept. 23, 1852	Jan. 26, 1855
Lemieux, Hon. F.	"	Jan. 27, 1855	Nov. 25, 1857
Alleyn, Hon. C.	"	Nov. 26, 1857	Aug. 1, 1858
Holton, Hon. L. H.	"	August 2, 1858	" 6, 1858
Sicotte, Hon. L. V.	"	" 7, 1858	Jan. 10, 1859
Rose, Hon. John.	"	Jan. 11, 1859	June 12, 1861
Cauchon, Hon. Jos.	Commissioner	June 13, 1861	May 23, 1862
Tessier, Hon. U. J.	"	May 24, 1862	" 27, 1863
Drummond, Hon. L. T.	"	" 28, 1863	July 23, 1863
Laframboise, Hon. M.	"	July 24, 1863	March 29, 1864
Chapais, J. C.	"	March 30, 1864	June 30, 1867
Casgrain, Hon. Chas. Eus.	Second Commissioner.	July 9, 1846	Feb. 29, 1848
Cameron, Hon. M.	Assistant Commissioner.	March 11, 1848	" 1, 1850
Wettenhall, James, Esq.	"	Feb. 2, 1850	April 16, 1850
Bourret, Hon. Jos.	"	April 17, 1850	Feb. 11, 1851
Killaly, Hon. H. H.	"	Feb. 12, 1851	May 6, 1859
Keefer, Samuel	Deputy Commissioner.	May 6, 1859	March 7, 1864
Trudeau, Toussaint.	"	March 8, 1864	May 29, 1868
Begley, Thos. A.	Secretary	Feb. 10, 1841	Oct. 31, 1858
Trudeau, Toussaint.	"	Dec. 13, 1859	March 7, 1864
Braun, Frederick.	"	March 8, 1864	July 1, 1867
Page, John	Chief Engineer	Oct. 31, 1873	Oct. 1, 1879

9-10 EDWARD VII., A. 1910

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1909—*Continued.*

Names.	Capacity or Office.	Date of Appointment.			
		Served.			
		From		To	
<i>Under Statute 31 Vic., Cap. 12.</i>					
McDougall, Hon. Wm.....	Minister.....	July 1, 1867	Dec. 7, 1869		
Langevin, C. B., Hon. Hector L.....	".....	Dec. 8, 1869	Nov. 6, 1873		
Mackenzie, Hon. Alexander.....	".....	Nov. 7, 1873	Oct. 16, 1878		
Tupper, C.B., K.C.M.G., Sir Charles.....	".....	Oct. 17, 1878	May 19, 1879		
Langevin, C.B., K.C.M.G., Sir Hector L.....	".....	May 20, 1879	Aug. 11, 1891		
Smith, Hon. Frank.....	Acting Minister.....	Aug. 14, 1891	Jan. 10, 1892		
Ouimet, Hon. Joseph Aldéric.....	Minister.....	Jan. 11, 1892	April 30, 1896		
Desjardins, Hon. Alphonse.....	".....	May 1, 1896	July 12, 1896		
Tarte, Hon. J. Israel.....	".....	July 13, 1896	Oct. 21, 1902		
Sutherland, Hon. James.....	".....	Nov. 11, 1902	May 3, 1905		
Hyman, Hon. Charles S.....	".....	May 22, 1905	Aug. 29, 1907		
Pugsley, Hon. Wm.....	".....	Aug. 30, 1907			
Trudeau, Toussaint.....	Deputy Minister.....	May 29, 1898	Oct. 1, 1879		
Baillargé, G. F.....	".....	Oct. 4, 1879	Dec. 31, 1890		
Gobeil, A., I.S.O.....	".....	Jan. 1, 1891	June 2, 1908		
Hunter, James B.....	".....	July 1, 1908			
Braun, Frederick.....	Secretary.....	" 1, 1867	Sept. 30, 1879		
Chapleau, S.....	".....	Oct. 1, 1879	Nov. 4, 1880		
Ennis, F. H.....	".....	Nov. 5, 1880	Jan. 13, 1885		
Gobeil, A.....	".....	Jan. 23, 1885	Dec. 31, 1890		
Roy, E. F. E.....	".....	" 1, 1891	" 31, 1900		
Gélinas, Fred.....	".....	June 8, 1901	July 2, 1908		
Tessier, Napoléon.....	".....	Aug. 11, 1908			
McPherson, D. A.....	Assistant Secretary.....	Jan. 18, 1891	April 11, 1893		
Desrochers, Rodolphe, Charles.....	".....	" 8, 1896			
Page, John.....	Chief Engineer.....	July 1, 1868	Oct. 1, 1879		
Perley, H. F.....	".....	Nov. 25, 1880	July 10, 1891		
Coste, Louis.....	".....	July 26, 1892	March 18, 1899		
Lafleur, E. D.....	".....	Jan. 7, 1905			
Scott, Thos. S.....	Chief Architect.....	May 26, 1871	Oct. 30, 1881		
Fuller, Thomas.....	".....	Oct. 31, 1881	June 30, 1897		
Ewart, David, I.S.O.....	".....	Nov. 2, 1897			

NAMES
OF THE
OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA
ON MARCH 31, 1909
WITH
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Slides and Booms on March 31, 1909.

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Collector of Public Works Revenue.</i>						
E. T. Smith.....	Nov. 26, 1846.	Collector, chief clerk	Ottawa.....	July 1, 1889..	\$ cts. 2,150 00 a year...	Date of first appointment to Crown Timber Office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Revenue, July 1, 1870, to June 30, 1889. Transferred to civil list, with rank of first class clerk, January 5, 1892. Chief clerk, July 1, 1906.
James Steen.....	June 17, 1830.	Boatman.....	".....	" 12, 1889...	70 00 a month.	Employed during the season of navigation for eight months each year. Date of first appointment, May 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, January 7, 1884, to June 30, 1889.
J. Brassard.....	Jan. 9, 1854.	".....	".....	Mar. 1, 1901..	65 00 "	Employed during the season of navigation for eight months each year.
<i>Saguenay District.</i>						
G. Bilodeau.....	Jan. 29, 1841.	Boom master.....	Chicoutimi.....	May 1, 1906..	75 00 "	
Arm. Ouellet.....	June 15, 1879.	" keeper.....	".....	" 1, 1906..	40 00 "	
William Dallaire.....	Oct. 8, 1857.	".....	".....	Apr. 1, 1907..	50 00 "	
Willie Dallaire.....	Dec. 23, 1882.	".....	".....	May 1, 1906..	40 00 "	
<i>St. Maurice District.</i>						
L. P. Dallaire.....	June 11, 1856.	Paymaster.....	Three Rivers.....	May 1, 1898..	950 00 a year..	
Jos. Pagé.....	July 7, 1845.	Boom master.....	Mouth of St. Maurice	Dec. 10, 1879..	75 00 a month.	
John Dick.....	Apr. 15, 1818.	Asst. boom master.	Three Rivers.....	May 21, 1898..	75 00 "	
H. Bourassa.....	Aug. 15, 1859.	".....	Ste. Flore.....	Dec. 1, 1906..	52 00 "	
Moise Masson.....	Dec. 24, 1845.	Boom master.....	Grandes Piles.....	Apr. 19, 1898..	75 00 "	
N. Lymburner.....	July 22, 1855.	".....	Shawenigan Falls...	July 1, 1895..	75 00 "	
Napoléon Lapointe...	Mar. 15, 1872.	".....	Shawenigan Bay....	Nov. 12, 1906..	75 00 "	
Pierre Duchaine.....	Oct. 8, 1856.	".....	Grand Mère.....	May 7, 1907..	75 00 "	

SESSIONAL PAPER No. 19

Ottawa District.									
G. P. Brophy.....	Feb. 24, 1846.	Superintendent..	Ottawa.....	July 6, 1873..	2,900 00 a year..	Ottawa River Works.—In addition to the above officers, &c., there are employed during the running season, one foreman on slide at \$1.50, and one assistant foreman at \$1.25 a day; also 25 to 30 labourers at \$1 to \$1.40 a working day. Actively employed about seven months. Oversees repairs in winter.			
J. J. Kent.....	Jan. 28, 1864.	Accountant.....	".....	Aug. 1, 1886..	1,400 00 " " " "	" " " "			
J. C. Scott.....	June 27, 1865.	Asst. engineer.....	".....	April 1, 1889..	5 00 a day..	Employed about six months. Oversees repairs in winter.			
S. E. Smith.....	May 25, 1869.	Clerk.....	".....	Nov. 7, 1904..	3 00 " " " "	Actively employed about seven months. Employed about three months during season of navigation.			
Wm. Can.....	Apr. 22, 1860.	Messenger.....	".....	Jan. 1, 1892..	1 75 " " " "	Employed four months during season of navigation. Oversees repairs in winter.			
Pierre St. Pierre.....	Mar. 13, 1853.	Deputy slide master.	Carillon.....	June 1, 1897..	1 40 " " " "	" " " "			
D. Neenan.....	June 17, 1840.	Boom master.....	Catineau.....	Mar. 21, 1878..	500 00 a year..	" " " "			
J. Soulière.....	Nov. 8, 1829.	Deputy slide master.	Chaudière.....	—, 1858..	3 00 a day..	Employed about six months. Oversees repairs in winter.			
P. D. Chéné.....	May 6, 1843.	".....	Hall.....	June 14, 1899..	1 75 " " " "	Actively employed about seven months. Employed about three months during season of navigation.			
W. A. Shirreff.....	Oct. 27, 1842.	".....	Chats.....	Apr. 26, 1898..	1 50 " " " "	Employed four months during season of navigation. Oversees repairs in winter.			
J. J. Tierney.....	June 7, 1836.	".....	Arnprior.....	Mar. 27, 1908..	2 50 " " " "	" " " "			
Joseph McCrean.....	Mar. 26, 1859.	Boom master.....	Springtown.....	May 15, 1880..	25 00 a month..	" " " "			
Patrick Barry.....	" 27, 1858.	Slide master.....	High Falls.....	Mar. 10, 1888..	1 50 a day..	" " " "			
Duncan McLaren.....	Jan. 7, 1850.	Deputy slide master.	Portage du Fort.....	Sept. 7, 1881..	45¢ 25 a year..	" " " "			
N. Ro hon.....	April 2, 1879.	".....	Black River.....	Mar. 1, 1900..	480 00 " " " "	" " " "			
Wm. Selkirk.....	May 19, 1848.	".....	Lower Petawawa.....	Jan. 19, 1900..	2 00 a day..	" " " "			
J. R. Jennings.....	Apr. 28, 1843.	".....	Upper Petawawa.....	June 2, 1905..	2 00 " " " "	" " " "			
Wm. Thomson.....	May 3, 1843.	".....	Mountain.....	Sept. 2, 1879..	1 25 " " " "	" " " "			
S. Moorhead.....	" 3, 1861.	".....	Calumet.....	Mar. 1, 1901..	1 25 " " " "	" " " "			
John Mullin.....	July 27, 1851.	".....	Coulange.....	Apr. 10, 1899..	1 50 " " " "	" " " "			
T. Costello.....	June 13, 1851.	".....	Des Jochims.....	Mar. 1, 1904..	300 00 a year..	Employed three months during season of nav. Will inspect works when required.			
J. F. McGuire.....	Dec. 16, 1842.	".....	Dumoine.....	May 1, 1897..	2 00 a day..	" " " "			
Jas. Carvey.....	July 6, 1850.	In charge.....	Cedar Lake Dam.....	Apr. 1, 1901..	2 00 " " " "	" " " "			
J. J. Malbecq.....	Nov. 13, 1844.	Deputy slide master.	Crooked Chute.....	" 3, 1905..	2 00 " " " "	" " " "			
A. H. Johnson.....	" 25, 1839.	".....	Chenaux.....	—, 1865..	2 50 " " " "	" " " "			
Newcastle District.									
W. T. Junkin.....	Nov. 2, 1867.	Slide master.....	Fenelon Falls.....	Nov. 15, 1896..	100 00 a year..	Receives \$290 a year as look master from Dept. of Railways and Canals.			
J. C. Bates.....	".....	".....	Barleigh Falls.....	Feb. 6, 1907..	100 06 " " " "	" " " "			
C. Choquette.....	Nov. 25, 1850.	Boom master.....	Bedeil Station.....	July 26, 1897..	100 60 " " " "	" " " "			
Burlington Channel Swing Bridge.									
Wm. Omand.....	July 6, 1837.	Bridge attendant.....	Burlington.....	Sept. 19, 1896..	650 00 " " " "	Employed nine months.			
W. Hopkins.....	June 4, 1846.	Bridge assistant.....	".....	July 1, 1902..	1 65 a day..	" " " "			
* Appointed Accountant, October 4, 1904.									

* Appointed Accountant, October 4, 1904.

9-10 EDWARD VII., A. 1910

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.
STATEMENT showing the Names, Dates of Appointment, Salaries, &c.—Continued.

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks
<i>Burlington Channel Swing Bridge.</i> —Continued.					\$ cts.	
H. Lampron.....	Dec. 14, 1863.	Bridge assistant.....	Burlington.....	Sept. 8, 1902..	1 65 per day.	Employed nine months.
Jas. Eustice.....	Feb. 27, 1872	"	"	" 19, 1896..	1 65 " ..	" ..
<i>Yamaska Lock.</i>						
O. Mineau.....	July 4, 1844.	Lock keeper	Yamaska.....	Sept. 1, 1885..	75 00 a month.	" ..
H. Lambert	Aug. 20, 1844.	"	"	July 1, 1897..	40 00 " ..	" ..
<i>Rivière du Lièvre Lock.</i>						
Hugh R. Gorman.....	Sept. 20, 1842.	Lock master.....	Rivière du Lièvre...	April 15, 1897..	480 00 a year.	Employed eight months.
Charles Brazeau	Dec. 23, 1862.	Labourer.....	"	March 3, 1902..	35 00 a month.	
<i>Rivière Saint-Louis, Feder.</i>						
Julien Monpetit.....	Mar. 4, 1866.	Gate keeper	Rivière St. Louis...	May 11, 1903..	10 00 a month.	

JOS. VINCENT.

NAMES
OF
PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS
ON MARCH 31, 1909
WITH
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

GRAVING DOCK EMPLOYEES.

STATEMENT showing the names, Dates of Appointment, Salaries &c., of persons employed on the various Graving Docks, March 31, 1909.

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Esquimalt Graving Dock, British Columbia.</i>					
J. A. Gould.....	Dockmaster	Esquimalt.....	June 20, 1906....	\$ 150 00 a month..	
John Jeffcott.....	Engineer.....	"	Jan. 4, 1901....	129 00 "	
F. N. Jones	Assistant engineer	"	" 8, 1901....	90 00 "	
A. D. Grieve.....	Carpenter	"	Dec. 1, 1878....	115 00 "	
J. Young.....	Labourer.....	"	June 1, 1903....	60 00 "	
J. Stock.....	"	"	July 1, 1894....	60 00 "	
Chas. Jordan.....	Stoker.....	"	" 1, 1901....	65 00 "	
G. Springer.....	"	"	April 1, 1903....	60 00 "	
Joseph Apley.....	Night watchman.....	"	Jan. 1, 1909....	60 00 "	
<i>Levis Graving Dock.</i>					
Alf. Sampson.....	Dockmaster	Levis.....	Feb. 15, 1900....	1,750 00 a year....	
W. McDougall.....	Mechanical engineer.....	"	June 1, 1888....	75 00 a month..	
T. Despres.....	Asst. mechanical engineer.....	"	July 21, 1901....	60 00 "	
Casimir Bourassa.....	Fireman.....	"	Feb. 15, 1907....	40 00 "	
<i>Kingston Graving Dock.</i>					
F. S. Rees.....	Dockmaster	Kingston.....	Apr. 1, 1897....	1,400 00 a year....	
James Gillie.....	1st engineer.....	"	Nov. 1, 1905....	80 00 a month..	
Wm. Geoghegan.....	Fireman	"	July 1, 1892....	50 00 "	
C. Staley	Watchman	"	" 1, 1892....	50 00 "	

JOS. VINCENT.

LIST
OF
ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS
EMPLOYED IN THE
PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON MARCH 31, 1909
DATES OF APPOINTMENT, SALARIES, ETC.

9-10 EDWARD VII., A. 1910

ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Cartakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
						\$ c.		\$ c.
Amherst.	Post office.	J. H. Chapman.	Jan. 3, 1846	Caretaker.	Sept. 1, 1901	33 33	12 months	400 00
Antigonish.	Public building.	J. C. Fraser.	May 31, 1847	"	Oct. 1, 1907	33 33	12 "	400 00
Annapolis.	Postoffice and custom house	John McKay	Oct. 26, 1847	"	April 1, 1891	33 33	12 "	400 00
Archiat.	Public building.	Mrs. A. DeRoach.	June 30, 1868	"	May 5, 1905	12 50	12 "	150 00
Baddeck.	"	D. F. McKenzie	May 20, 1848	"	Jan. 21, 1899	20 83	12 "	250 00
Brigewater.	"	Thos. Cohon	Jan. 8, 1853	"	Jan. 19, 1909	33 33	12 "	400 00
Canso.	"	R. Sutherland.	Dec. 23, 1855	"	Oct. 12, 1907	33 33	12 "	400 00
Dartmouth.	"	I. C. Henley.	" 11, 1846	"	May 22, 1894	20 83	12 "	250 00
Digby.	"	F. Dennison.	Nov. 8, 1841	"	Mar. 14, 1902	33 33	12 "	400 00
Guysborough.	"	W. G. Hadley.	" 29, 1844	"	May 2, 1906	4 16	12 "	50 00
Halifax.	Dominion building.	Richard Power.	Aug. 15, 1834	Engineer.	Oct. 1, 1871	62 50	12 "	750 00
"	"	J. DeYoung	Dec. 8, 1860	Fireman.	Nov. 28, 1904	50 00	12 "	600 00
"	"	J. F. Sullivan	April 16, 1866	Asst. Caretaker.	July 1, 1892	16 60	12 "	200 00
"	Custom house.	J. Delaney	May.	Watchman	Jan. 6, 1906	39 00	8 "	468 00
"	Drill hall.	John Crowell.	Feb. 26, 1852	Engineer.	Dec. 13, 1901	50 00	12 "	600 00
"	Armouries.	R. Morrison.	Mar. 26, 1857	Fireman.	Mar. 4, 1903	50 00	12 "	600 00
"	Examining warehouse.	M. O'Neil	Dec. 30, 1856	Caretaker.	Oct. 1, 1897	37 50	12 "	450 00
"	Immigrant building.	John Oxley.	April 17, 1856	Fireman.	Feb. 2, 1897	55 00	12 "	660 00
"	New custom house.	J. Barnes.	Dec. 3, 1857	Engineer.	Jan. 28, 1907	60 00	12 "	720 00
"	"	G. Selig.	April 21, 1854	Fireman.	Apr. 26, 1907	50 00	12 "	600 00
"	"	F. Warner.	Oct. 8, 1860	"	May 1, 1907	37 50	12 "	450 00
"	Public building.	J. R. McLeunan	Jan. 22, 1857	Caretaker.	Mar. 20, 1908	33 33	12 "	400 00
"	"	W. Hiltz.	April 30, 1864	"	Nov. 14, 1900	33 33	12 "	400 00
"	"	James Clements.	June 5, 1835	"	June 27, 1900	33 33	12 "	400 00
"	"	J. E. Hebb.	Nov. 3, 1833	"	" 7, 1895	25 00	12 "	300 00
"	Post office.	J. A. Mutch.	Dec. 13, 1840	"	Oct. 3, 1901	37 50	12 "	450 00
"	Public building.	Alex. Green.	July 16, 1825	"	" 31, 1897	33 33	12 "	400 00
"	Post office and custom house.	Jas. Arbuckle	Feb. 18, 1836	"	" 20, 1896	50 00	12 "	600 00
"	Post office.	J. A. Watt.	Sept. 5, 1849	"	" 1, 1903	33 33	12 "	400 00
"	Public building.	C. McMillan.	Nov. 25, 1857	"	Jan. 19, 1905	33 33	12 "	400 00
"	Postoffice and custom house	Mrs. M. Keefe.	Jan. 4, 1850	"	" 13, 1904	33 33	12 "	400 00
"	"	Alex. P. Smith.	May 17, 1837	"	April 1, 1897	33 33	12 "	400 00
"	Post office	J. A. Mosher.	Nov. 16, 1841	"	Feb. 13, 1899	33 33	12 "	400 00
"	Public building.	W. H. Whelan.	Dec. 23, 1841	"	Mar. 1, 1900	33 33	12 "	400 00

SESSIONAL PAPER No. 19

Charlottetown	P. E. I.	Dominion building	A. McKenzie	May	12, 1856	" & engineer	Nov.	1, 1895	45 00	12	540 00
"	"	"	E. Cameron	Nov.	27, 1853	Messenger	"	15, 1906	41 67	12	500 00
"	"	"	M. A. Allan	Aug.	1, 1855	"	Jan.	"	50 00	12	600 00
"	"	"	P. McKenna	"	4, 1841	Watchman	May	27, 1907	50 00	12	600 00
Montague	"	Public building	H. L. Fearon	April	13, 1845	Caretaker	Aug.	27, 1906	13 33	12	150 00
Souris	"	"	Thos. Shaw	Aug.	11, 1850	"	Dec.	8, 1906	29 16	12	350 00
Summerside	"	Dominion building	A. McSwen	Sept.	1, 1855	"	Sept.	1, 1897	33 33	12	400 00
Bathurst	N. B.	Post office	J. H. Bonet	July	16, 1846	"	Mar.	26, 1906	33 33	12	400 00
Campbellton	"	Public building	W. Storey	Sept.	15, 1863	"	Sept.	13, 1907	33 33	12	400 00
Chatham	"	Post office	C. Johnston	May	18, 1856	"	Mar.	27, 1895	25 00	12	300 00
Carleton, St. John.	"	"	J. C. Leonard	"	"	"	Sept.	15, 1908	33 33	12	400 00
Dalhousie	"	"	Wm. Gould	Jan.	1, 1853	"	Nov.	26, 1890	33 33	12	400 00
Fredericton	"	"	L. Yaxa	Dec.	18, 1843	"	July	1, 1900	33 33	12	400 00
Marystown	"	"	G. W. Foster	Feb.	2, 1855	"	Dec.	23, 1903	12 50	12	150 00
Moncton	"	"	E. B. Hicks	Jan.	11, 1852	"	Jan.	11, 1886	37 50	12	450 00
Newcastle	"	"	Patrick Keating	Mar.	13, 1840	"	Oct.	23, 1886	33 33	12	400 00
Richbcto.	"	"	J. Murray	Aug.	16, 1839	"	Feb.	1, 1904	60 00	12	720 00
St. John.	"	Customs house	Neil J. Morrison	July	25, 1858	Eng. & caretaker	April	27, 1894	50 00	12	600 00
"	"	"	Christopher White	Nov.	29, 1844	Fireman	Nov.	9, 1885	37 50	12	450 00
"	"	"	J. T. Logan	"	"	Asst. fireman	Dec.	23, 1905	50 00	12	600 00
"	"	"	James A. Paul	Aug.	1, 1857	Caretaker	Oct.	13, 1891	50 00	12	600 00
"	"	Post office	James Wolfe	Mar.	10, 1850	Engineer	Dec.	1, 1893	50 00	12	720 00
"	"	"	Edward Hume	Feb.	22, 1849	Hoist attendant	Nov.	27, 1882	55 00	12	600 00
"	"	Detention hospital	A. E. Thud	May	14, 1845	Caretaker	"	6, 1907	50 00	12	600 00
St. Stephen	"	Post office	Jas. Gray	"	"	Fireman	Dec.	12, 1908	50 00	12	600 00
Sussex	"	"	Samuel Topping	April	2, 1839	Caretaker	May	25, 1887	41 66	12	500 00
Tracadie	"	"	Mrs. N. Dryden	June	21, 1840	"	Mar.	26, 1901	25 00	12	300 00
"	"	Lazaretto	P. Arsenau	May	19, 1869	Fireman	Dec.	24, 1908	40 00	12	480 00
"	"	Public building	B. Bideau	Jan.	10, 1909	"	Jan.	10, 1909	30 00	12	360 00
Woodstock	"	"	Charles Trafton	Jan.	20, 1839	Caretaker	May	1, 1897	33 33	12	400 00
Acton Vale	P. Q.	Armoury	A. W. Fields	Mar.	25, 1872	Fireman	Oct.	11, 1905	50 00	12	600 00
Aylmer	"	Post office	V. Lapointe	Dec.	27, 1869	Caretaker	Jan.	3, 1906	33 33	12	400 00
Buckingham	"	"	A. Bourgeau	Jan.	23, 1870	"	April	9, 1904	8 33	12	100 00
Chicoutimi	"	"	T. F. Bisson	May	23, 1848	"	Feb.	3, 1903	10 00	12	120 00
Coaticook	"	Public building	G. A. Blais	Sept.	24, 1870	"	Dec.	4, 1907	40 00	12	480 00
Drummondville	"	"	Israel Baldwin	Nov.	16, 1839	"	June	17, 1889	33 33	12	400 00
Farnham	"	Post office	A. Paré	April	27, 1842	"	"	5, 1902	33 33	12	400 00
Fraserville	"	"	J. Bélanger	Jan.	19, 1867	"	Jan.	30, 1905	25 00	12	300 00
Granby	"	Public building	W. D. Raymond	"	7, 1876	"	April	11, 1903	33 33	12	400 00
Highclage	"	Post office	J. A. Beauchemin	May	1, 1862	"	May	12, 1903	25 00	12	300 00
Hull	"	"	J. H. Brown	Oct.	7, 1851	"	Mar.	27, 1902	16 66	12	200 00
Iberville	"	"	J. T. Madors	Dec.	1, 1843	"	"	8, 1900	12 50	12	150 00
Joliette	"	"	A. Goutois	Jan.	20, 1869	"	May	7, 1907	40 00	12	480 00
Lachine	"	"	A. Ratel	Dec.	29, 1845	"	Sept.	1, 1897	33 33	12	400 00
Laprairie	"	"	P. O. Robert	Sept.	7, 1846	"	Jan.	26, 1899	8 33	12	100 00
L'Assomption	"	"	Jos. Brisson	Nov.	11, 1869	"	Nov.	29, 1901	12 50	12	150 00
Lewis	"	"	E. Arbour	Dec.	8, 1850	"	July	1, 1904	20 00	12	240 00
Longueuil	"	"	C. Lamontagne	"	28, 1850	"	Mar.	17, 1908	33 33	12	400 00
Montreal	"	Dominion building	F. X. Mullé	May	12, 1856	"	"	16, 1905	25 00	12	300 00
"	"	"	J. T. Murphy	"	6, 1865	Foreman	"	2, 1903	108 33	12	1,300 00

9-10 EDWARD VII., A. 1910

STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909—Continued.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
						\$ cts.		\$ cts.
Montreal	Que.							
"	Dominion building.	Ed. Lanctot.	April 14, 1857	Caretaker.	Dec. 3, 1898	41 67	12 months.	500 00
"	Examining warehouse.	M. Boyer.	Feb. 18, 1848	Fireman.	Mar. 4, 1882	60 00	12 "	720 00
"	"	Art. Lesieur.	June 22, 1868	Hoist attendant.	April 8, 1905	50 00	12 "	600 00
"	"	Jos. Forges.	May 15, 1873	Fireman.	Nov. 2, 1904	50 00	12 "	600 00
"	Examining warehouse.	Jos. Langevin.	Mar. 10, 1850	Fireman.	Oct. 18, 1905	50 00	12 "	600 00
"	"	A. Nuttall.	Feb. 15, 1872	Electrician.	June 1, 1905	2 25	per day.	700 00
"	"	M. Fitzgerald.		Hoist attendant.	Jan. 31, 1907	60 00	12 months.	720 00
"	"	J. B. Desjardins.		Cleaner.	" 26, 1907	15 00	12 "	540 00
"	"	Samuel Lanctot.	June 28, 1850	"	Nov. 23, 1905	45 00	12 "	540 00
"	"	P. Prudhomme.	Mar. 7, 1854	Hoist attendant	Mar. 19, 1906	50 00	12 "	600 00
"	"	R. Barthe.	July 12, 1863	"	May 1, 1906	50 00	12 "	600 00
"	"	G. Labelle.	May 14, 1871	"	Sept. 12, 1904	50 00	12 "	600 00
"	"	S. McGarry.	June 13, 1873	"	" "	50 00	12 "	600 00
"	"	J. Neville.	Mar. 18, 1870	"	" 12, 1904	50 00	12 "	600 00
"	"	A. Marehand.		"	" "	50 00	12 "	600 00
"	"	A. Drouin.	June 14, 1868	"	Nov. 28, 1904	50 00	12 "	600 00
"	"	Ald. Desjardins.	Sept. 3, 1859	Cleaner.	June 30, 1905	50 00	12 "	600 00
"	"	F. Nadon.	June 15, 1847	"	Dec. 15, 1902	48 00	12 "	576 00
"	"	A. Tremblay.		Night fireman.		50 00	8 "	400 00
"	"	A. Barrette.		Hoist attendant.		60 00	12 "	720 00
"	"	James Quinn.		Freight hoist att.		50 00	12 "	600 00
"	"	J. E. Lamarche.		"		50 00	12 "	600 00
"	Post office.	F. Green.	Oct. 4, 1837	Engineer.	Jan. 1, 1885	60 00	12 "	720 00
"	"	A. Langevin.	May 12, 1885	Asst. engineer.	April 2, 1907	50 00	12 "	600 00
"	"	L. D. Thibault.	Jan. 28, 1861	Electrician.	Dec. 15, 1905	70 00	12 "	840 00
"	"	F. X. Leclerc.	Dec. 13, 1859	Asst. electrician.	June 28, 1905	65 00	12 "	780 00
"	"	Oslas Renard.	June 14, 1869	Night "	Feb. 2, 1907	65 00	12 "	780 00
"	"	I. Trudeau.	Jan. 22, 1863	Caretaker.	Oct. 1, 1902	50 00	12 "	600 00
"	"	Oscar Renaud.	Feb. 19, 1862	Elevator man.	Sept. 10, 1898	50 00	12 "	600 00
"	"	Art. Forget.	July 15, 1867	"	Dec. 15, 1893	50 00	12 "	600 00
"	"	L. Brault.	Dec. 29, 1854	"	Sept. 1, 1901	50 00	12 "	600 00
"	"	A. Bonrassa.	June 1, 1857	Freight hoist att.	Aug. 4, 1893	50 00	12 "	600 00
"	"	C. Berthiaume.	Nov. 8, 1870	Night watchman.	July 2, 1902	50 00	12 "	600 00
"	"	O. de Lacharantaye.		Post, hoist att.	April 26, 1906	50 00	12 "	600 00
"	"	C. Vadeboncoeur.	May 17, 1812	Freight hoist att.	Feb. 6, 1864	50 00	12 "	600 00

SESSIONAL PAPER No. 19

Montreal	Que.	Post Office	J. Murphy.	April 13, 1866	Day lobby-keeper.	1 75	per day.	639 00
"	"	"	G. Robert	Feb. 2, 1863	" watchman.	1 75	"	639 00
"	"	"	J. McLaughlan.	Dec. 17, 1867	" lobby-keeper.	1 75	"	639 00
"	"	"	Alf. Trudeau.	April 13, 1866	Fright hoist attendant.	50 00	12 months.	600 00
"	"	"	J. Dutrice.	Feb. 2, 1863	Messenger	2 00	per day 12 m.	730 00
"	"	"	J. O. Dronin.	Dec. 17, 1867	"	1 50	"	548 00
"	"	"	Louis St. Jean.	Sept. 17, 1840	Fireman	50 00	12 months.	600 00
"	"	"	Theo. Gauthier.	July 10, 1865	Cleaner	45 00	"	540 00
"	"	"	C. Dandelin.	June 19, 1843	Caretaker.	37 50	"	450 00
"	"	"	H. Valiquette.	Dec. 30, 1871	Carpenter.	65 00	"	780 00
"	"	"	Art. Porter.	May 23, 1862	Asst. carpenter.	40 00	"	720 00
"	"	"	G. Flammigan.	Mar. 29, 1862	Electrician.	65 00	"	780 00
"	"	"	J. Harrington.	Nov. 29, 1861	Asst. electrician.	2 00	per day 12 m	720 00
"	"	"	B. Lajumesse.	Nov. 29, 1861	Fireman	50 00	12 months.	600 00
"	"	"	J. Gagne.	Apr. 20, 1867	Engineer	50 00	"	600 00
"	"	"	A. Crochettier.	June 24, 1881	Fireman	50 00	"	600 00
Montmagny	"	"	C. Normand.	Mar. 11, 1846	Caretaker.	33 33	"	400 00
Nicolet	"	"	U. Papillon.	May 16, 1843	"	33 33	"	400 00
Norvingue	"	"	T. A. Christin.	Feb. 12, 1857	"	33 33	"	400 00
Quebec	"	"	D. P. Kennedy.	Nov. 9, 1867	Engineer.	25 00	"	300 00
"	"	"	J. G. McLaughlin.	Nov. 15, 1880	Fireman	75 00	"	900 00
"	"	"	James O'Neil.	Aug. 15, 1861	"	53 33	"	640 00
"	"	"	John R. Mountain.	Nov. 1, 1848	"	45 00	"	540 00
"	"	"	J. Roy.	Feb. 25, 1836	Caretaker.	58 33	"	700 00
"	"	"	F. J. Cooper.	July 8, 1858	Fireman	60 00	"	720 00
"	"	"	C. Turcotte.	Apr. 14, 1866	Caretaker.	10 00	"	120 00
"	"	"	J. D. Villeneuve.	Oct. 22, 1875	Messenger	50 00	"	600 00
Peribonka.	"	"	M. Lewis.	May 6, 1871	Caretaker.	1 50	per day 12 m.	547 50
Roberval.	"	"	E. Roy.	Dec. 14, 1877	"	25 00	12 months.	300 00
Rimouski.	"	"	G. Audet.	Nov. 18, 1849	"	25 00	"	300 00
Sherbrooke.	"	"	A. Lepage.	Feb. 7, 1866	"	12 50	"	150 00
"	"	"	O. Desjardis.	July 14, 1839	"	33 33	"	400 00
"	"	"	A. Desjardis.	Aug. 16, 1848	"	33 33	"	400 00
"	"	"	C. Robitaille.	Jan. 22, 1848	"	40 00	"	480 00
St. Henri.	"	"	A. C. A. Bissonnette.	May 25, 1858	"	40 00	"	480 00
St. Hyacinthe.	"	"	J. Girouard.	Sept. 16, 1838	"	43 33	"	520 00
"	"	"	E. Chapin.	Apr. 9, 1844	"	33 33	"	400 00
"	"	"	N. Langeher.	Sept. 10, 1811	Fireman.	50 00	"	600 00
St. Jean.	"	"	L. Forrant.	Jan. 21, 1849	Caretaker.	29 16	"	350 00
St. Jerome.	"	"	J. Savard.	Oct. 24, 1859	"	33 33	"	400 00
St. Louis-du-Mile-End	"	"	M. A. Campeau.	Mar. 6, 1846	"	33 33	"	400 00
Terrebonne.	"	"	N. Sasseville.	Jan. 29, 1844	"	25 00	"	300 00
Thetford.	"	"	J. Rousseau.	Dec. 22, 1839	"	12 50	"	150 00
Three Rivers.	"	"	Ph. Gravelle.	June 3, 1828	"	50 00	"	600 00
"	"	"	A. Pochier.	Sept. 25, 1867	Fireman.	50 00	"	600 00
Valleyfield.	"	"	J. B. Laniel.	Oct. 20, 1862	Caretaker.	33 33	"	400 00
Victoriaville.	"	"	G. Beaudet.	Feb. 20, 1862	"	6 25	"	75 00
Alexander.	Ont.	"	D. K. McDonald.	July 4, 1847	"	41 66	"	500 00
Amherstburg.	"	"	Mrs. R. Elliott.	Dec. 28, 1854	"	33 33	"	400 00

9-10 EDWARD VII., A. 1910

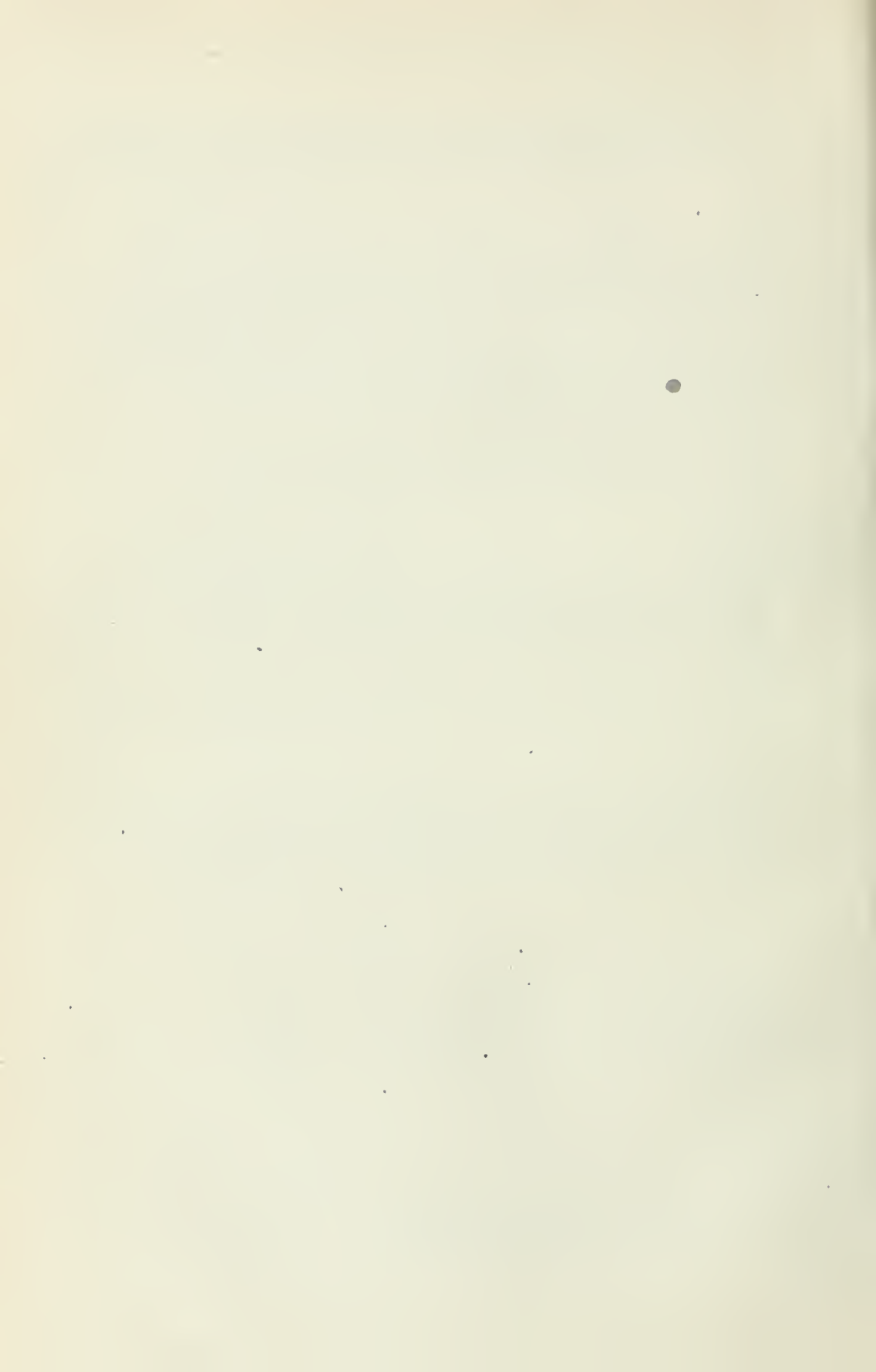
STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1909—Continued.

Locality.	Building.	Name.	Date of birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each Year.	Yearly Salary.
						\$	cts.	\$
Almonte	Post Office.	P. Burns	Jan. 28, 1861	Caretaker	Sept. 1, 1907	33	33	400 00
Arnprior	Public building	R. B. McCreary	Jan. 11, 1862	"	Mar. 15, 1899	33	33	400 00
Barrie	Post office	E. Savigny	Mar. 19, 1847	"	Mar. 1, 1903	33	33	400 00
Brockville	"	C. F. Gray	Apr. 28, 1861	"	Apr. 2, 1908	37	50	450 00
Brantford	"	John Squire	Dec. 24, 1842	"	Oct. 27, 1880	50	00	600 00
Bridgeburg	Public building	Wm. Hanna	Aug. 15, 1863	"	3, 1905	25	00	300 00
Bowmanville	"	Wm. W. Alin	Jan. 13, 1850	"	Feb. 10, 1905	33	33	400 00
Belleville	Post office.	S. Haight	Aug. 26, 1857	Caretaker	Jan. 24, 1901	50	00	600 00
Berlin	"	J. Clemens	June 21, 1849	"	May 15, 1900	33	33	400 00
Brampton	"	J. Foster	Sept. 16, 1846	"	Aug. 1, 1906	33	33	400 00
Carleton Place	"	Jas. F. Halfpenny	Apr. 17, 1858	"	May 13, 1892	25	00	300 00
Chatham	"	W. W. Mitchell	May 25, 1848	"	Jan. 7, 1885	41	66	500 00
"	Armoury.	T. W. Stephenson	Oct. 9, 1864	Fireman	Oct. 9, 1906	50	00	600 00
"	Post office.	R. Conroy	Feb. 6, 1848	Caretaker, &c.	April 1, 1897	33	33	400 00
Cornwall	"	G. A. Gibson	May 29, 1861	"	Sept. 3, 1891	4	16	50 00
Caruga	"	J. Scott	Jan. 21, 1856	"	Feb. 9, 1904	16	66	200 00
Clinton	"	J. Staples	June 3, 1834	"	Dec. 10, 1906	33	33	400 00
Cobourg	Public building	M. Hart	Jan. 15, 1862	"	July 1, 1903	33	33	400 00
Deseronto	"	Wm. Graham	Dec. 5, 1853	"	1, 1898	4	16	50 00
Dundas	"	D. J. McCallum	April 5, 1834	"	21, 1904	37	50	450 00
Fort William	"	T. Barrett	June 17, 1861	"	Sept. 1, 1902	33	33	400 00
Galt	"	R. McLeod	July 30, 1865	"	May 25, 1901	41	66	500 00
Guelph	" &c	G. Bisset	April 14, 1851	"	Sept. 1, 1897	33	33	400 00
Goderich	Dominion building	Alfred Barnard	Dec. 27, 1847	"	Dec. 10, 1896	50	00	600 00
Hamilton	"	J. Wigglesworth	Aug. 7, 1863	Fireman	Oct. 1, 1896	50	00	600 00
"	"	Thomas Nicholson	Dec. 17, 1857	Engineer	Mar. 2, 1887	52	00	600 00
"	Inland revenue building	C. Blackman	May 23, 1850	Caretaker	Jan. 9, 1905	12	00	141 00
"	Armoury.	A. Geo. Andrews	May 11, 1877	Fireman	Mar. 5, 1903	60	00	720 00
"	Public building	A. Marleau	Sept. 22, 1857	Caretaker	Aug. 7, 1906	33	33	400 00
Hawkesbury	"	John McDonald	June 30, 1841	"	Nov. 20, 1900	33	33	400 00
Ingersoll	"	Mrs. J. Link	May 10, 1850	Caretaker	Dec. 7, 1901	33	33	400 00
Kenora	Royal Military College	T. Harrison	Aug. 21, 1875	Fireman	May 1, 1902	50	50	600 00
Kingston	Armoury	F. Forsythe	Nov. 15, 1866	Engineer	Feb. 11, 1904	50	00	600 00
"	Royal Military College	Wm. Hazlett	May 27, 1874	"	Nov. 20, 1900	85	00	1,020 00

9-10 EDWARD VII., A. 1910

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchman employed at Dominion Public Buildings on March 31, 1909—*Continued*.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time Employed each year.	Yearly Salary.
Toronto	Examining warehouse.	Wm. Scott.	Nov. 1888	Watchman.	June 1, 1905	\$ 2 00	p. d.	\$ cts.
"	Union station	J. Gormally.	Sept. 16, 1872	Hoist attendant.	Sept. 31, 1901	50 00	12 months	730 00
"	"	W. P. Murphy.	Sept. 16, 1868	Elevatorman.	Oct. 28, 1905	50 00	12 "	600 00
"	P. O. station	James Rae.	Feb. 17, 1864	Caretaker.	Jan. 12, 1904	41 66	12 "	500 00
"	Post office.	J. Somers.	April 8, 1885	Engineman.	Oct. 9, 1897	55 00	12 "	660 00
"	"	P. Cassidy.	May 2, 1892	Fireman.	May 8, 1906	55 00	12 "	660 00
"	"	T. Letray.	March 17, 1858	"	Jan. 10, 1907	55 00	12 "	660 00
"	"	W. J. Graham.	July 18, 1849	"	Oct. 1, 1896	60 00	12 "	720 00
"	"	J. Devins.	Oct. 11, 1849	Caretaker.	Feb. 25, 1905	33 33	12 "	400 00
Toronto.	Drill hall.	Richard Eyre.	Oct. 8, 1867	"	Mar. 25, 1905	55 00	12 "	660 00
"	"	D. Gilman.	Aug. 9, 1858	"	Oct. 1, 1898	70 00	12 "	840 00
"	"	G. Robinson.	Sept. 13, 1844	Caretaker.	July 14, 1899	55 00	12 "	660 00
Trenton.	Public building	David Allan.	May 21, 1861	"	Aug. 31, 1909	33 33	12 "	400 00
Walkerton.	"	Mrs. T. Gibson.	Oct. 26, 1848	Engineman.	May 12, 1905	33 33	12 "	400 00
Windsor	Post office	I. Bellefleur.	Oct. 6, 1844	Caretaker.	Dec. 24, 1897	50 00	12 "	600 00
"	"	W. Curtis.	Mar. 26, 1874	Engineman.	Nov. 9, 1880	33 33	12 "	400 00
"	Drill hall.	W. Wheeler.	Sept. 12, 1852	Caretaker.	Jan. 19, 1906	50 00	12 "	600 00
Wingham.	Public building	P. Fisher.	June 6, 1864	Engineman.	Dec. 11, 1901	16 66	12 "	200 00
Woodstock.	"	Robert Kerr.	May 23, 1862	Engineman.	Nov. 19, 1905	37 50	12 "	450 00
"	Armoury	Jas. Brown.	May 30, 1843	Fireman.	May 19, 1908	50 00	12 months	600 00
Brandon.	"	T. Giles.	Mar. 25, 1840	"	Aug. 1, 1897	65 00	12 "	780 00
Portage la Prairie.	"	J. S. Teller.	July 11, 1879	"	July 1, 1904	45 00	12 "	540 00
Saskatoon.	Public building.	W. Kidd.	Aug. 20, 1867	"	Mar. 1, 1909	55 00	12 "	660 00
St. Boniface.	"	J. A. S. Chausse.	Sept. 18, 1871	"	Oct. 1, 1908	55 00	12 "	660 00
Winnipeg.	Custom house.	W. Harrington.	May 4, 1853	Engineman.	Sept. 29, 1908	60 00	12 "	720 00
"	New Post office.	Jos. Hay.	Oct. 25, 1848	Fireman.	July 20, 1905	80 00	12 "	960 00
"	"	J. Saunders.	Oct. 8, 1868	"	Nov. 23, 1908	60 00	12 "	720 00
"	"	Wm. Clark.	Feb. 10, 1872	Elevatorman.	July 10, 1908	60 00	12 months	720 00
"	"	N. Thoratinson.	Feb. 21, 1874	"	July 10, 1908	60 00	12 "	720 00
"	"	J. B. Fontaine.	Oct. 10, 1873	"	July 10, 1908	60 00	12 "	720 00
"	Postal station "B."	Thos. McLaughlin.	Nov. 6, 1849	Caretaker.	May 16, 1908	60 00	12 "	720 00
"	Public buildings.	John Lamb.	Mar. 25, 1876	Elevatorman.	Sept. 16, 1908	90 00	12 "	1,080 00
"	Old post office.	A. H. Latour.	Sept. 18, 1882	"	Sept. 16, 1908	80 00	12 "	960 00
"	"	E. L. Campbell.	July 10, 1857	Fireman.	June 27, 1906	65 00	12 "	780 00
"	"	Jas. Buggins.	May 10, 1843	Hoist attendant.	Mar. 16, 1887	55 00	12 "	660 00
"	"	Joseph Com.	Sept. 23, 1860	Night watchman	April 4, 1905	55 00	12 "	660 00
"	"	A. Boireau.	Sept. 23, 1860	"	April 4, 1905	55 00	12 "	660 00



OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM

JULY 2, 1867, TO MARCH 31, 1909

OFFICIAL CORRESPONDENCE.

LETTERS received and sent from July 2, 1867, to March 31, 1909.

Year.		Received.	Sent.
1867—From July 1 to December 31.....		2,075	1,511
1868 " January 1 to December 31.....		3,498	2,317
1869 " " " ".....		3,448	2,171
1870 " " " ".....		4,961	3,185
1871 " " " ".....		6,268	3,893
1872 " " " ".....		8,353	4,428
1873 " " " ".....		10,072	5,707
1874 " " " ".....		9,800	5,043
1875 " " " ".....		5,006	5,006
1876 " " " ".....		7,971	4,773
1877 " " " ".....		7,517	4,425
1878 " " " ".....		6,886	4,021
1879 " " to October 6.....		7,186	4,547
1879 " October 7 to December 31.....		2,033	810
1880 " January 1 ".....		8,451	4,411
1881 " " " ".....		9,599	5,529
1882 " " " ".....		10,505	5,699
1883 " " " ".....		11,633	6,227
1884 " " " ".....		13,114	6,903
1885 " " " ".....		8,977	5,321
1886 " " " ".....		9,644	5,352
1887 " " to June 30.....		4,866	2,735
1887 " July 1 " 1888.....		10,493	6,343
1888 " " " 1889.....		10,522	7,042
1889 " " " 1890.....		10,098	7,448
1890 " " " 1891.....		10,576	7,286
1891 " " " 1892.....		11,637	6,700
1892 " " " 1893.....		11,720	6,220
1893 " " " 1894.....		9,517	6,028
1894 " " " 1895.....		10,190	5,148
1895 " " " 1896.....		10,223	5,573
1896 " " " 1897.....		11,404	5,033
1897 " " " 1898.....		9,640	5,250
1898 " " " 1899.....		9,639	4,784
1899 " " " 1900.....		12,139	5,938
1900 " " " 1901.....		13,179	6,255
1901 " " " 1902.....		15,880	5,067
1902 " " " 1903.....		13,140	6,373
1903 " " " 1904.....		11,300	5,878
1904 " " " 1905.....		11,940	6,461
1905 " " " 1906.....		11,700	6,472
1906 " " March 31 1907.....		9,400	5,085
1907 " April 1 " 1908.....		14,650	7,469
1908 " " " 1909.....		15,160	9,296

9-10 EDWARD VII., A. 1910

LETTERS Sent from Chief Engineer's office, from January, 1880, to March 31, 1909.

Year.		Number.
1880.....	From January 10 to June 30.....	418
1880.....	" July 1 " 1881.....	1,795
1881.....	" " " 1882.....	2,352
1882.....	" " " 1883.....	2,651
1883.....	" " " 1884.....	3,611
1884.....	" " " 1885.....	3,119
1885.....	" " " 1886.....	2,867
1886.....	" " " 1887.....	3,281
1887.....	" " " 1888.....	3,552
1888.....	" " " 1889.....	4,229
1889.....	" " " 1890.....	3,374
1890.....	" " " 1891.....	3,948
1891.....	" " " 1892.....	4,009
1892.....	" " " 1893.....	4,232
1893.....	" " " 1894.....	3,966
1894.....	" " " 1895.....	4,603
1895.....	" " " 1896.....	4,239
1896.....	" " " 1897.....	4,994
1897.....	" " " 1898.....	4,696
1898.....	" " " 1899.....	5,277
1899.....	" " " 1900.....	7,366
1900.....	" " " 1901.....	4,341
1901.....	" " " 1902.....	6,759
1902.....	" " " 1903.....	4,327
1903.....	" " " 1904.....	5,295
1904.....	" " " 1905.....	5,496
1905.....	" " " 1906.....	8,036
1906.....	" " to March 31, 1907.....	3,771
1907.....	April 1 " 1908.....	6,456
1908.....	" " " 1909.....	9,275

NOTE.—The letters, including returns, received in the Chief Engineer's office may be estimated at the rate of two received to one sent.

LETTERS Received and Sent, Chief Architect's office, from January 1, 1880, to March 31, 1909.

	Received.	Sent.
1880—From January 1 to June 30.....		1,273
1880 " " " 1881.....		2,943
1881 " " " 1882.....		2,859
1882 " " " 1883.....	3,538	4,600
1883 " " " 1884.....	3,866	6,004
1884 " " " 1885.....	4,500	6,718
1885 " " " 1886.....	6,075	6,450
1886 " " " 1887.....	6,816	6,380
1887 " " " 1888.....	6,947	6,870
1888 " " " 1889.....	6,484	7,667
1889 " " " 1890.....	7,448	6,578
1890 " " " 1891.....		7,751
1891 " " " 1892.....	6,113	4,260
1892 " " " 1893.....	7,428	6,453
1893 " " " 1894.....	6,900	4,517
1894 " " " 1895.....	7,538	5,327
1895 " " " 1896.....	7,843	5,783
1896 " " " 1897.....	10,700	8,200
1897 " " " 1898.....	10,867	8,547
1898 " " " 1899.....	10,913	8,762
1899 " " " 1900.....	12,386	9,878
1900 " " " 1901.....	12,287	9,860
1901 " " " 1902.....	12,560	10,330
1902 " " " 1903.....	13,430	11,106
1903 " " " 1904.....	14,710	15,590
1904 " " " 1905.....	15,000	14,300
1905 " " " 1906.....	15,785	14,785
1906 " " to March 31, 1907.....	13,768	12,087
1907 " April 1 " 1908.....	17,000	16,340
1908 " " " 1909.....	17,353	16,755

SUPPLEMENTARY REPORT

OF THE

INTERNATIONAL WATERWAYS COMMISSION

1909

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1909

[No. 19c—1909.]

MEMORANDUM

FOR THE DEPUTY MINISTER OF PUBLIC WORKS

CONCERNING THE WORK OF

THE INTERNATIONAL WATERWAYS COMMISSION

SINCE 1st MARCH, 1908

Meetings of the full Commission have been held at regular intervals, averaging about once a month, alternately in Toronto and Buffalo.

The seven subjects dealt with have been:—

I. Diversion of 40,000 cubic feet of water per second from the lower Niagara river in the vicinity of Whirlpool rapids.

II. Article IV. of the Treaty between the United States and Great Britain signed on the 11th of April, 1908, concerning the boundary line between the United States and Canada from St. Regis, Ontario, and to the mouth of Pigeon river, Ontario, commonly called 'Delimitation of Boundaries Treaty.'

III. Application of the Long Sault Development and St. Lawrence Power companies for permission to dam the St. Lawrence river at the foot of Long Sault rapids.

IV. Application of the Cedars Rapids Manufacturing and Power Company.

V. Regulation of Lake Erie.

VI. Improvement in Detroit river.

VII. Effect of diversion of water through Niagara Falls Power Company's canal.

I. On the 24th of May, 1907, a Bill, No 25546, relating to the diversion of 40,000 cubic feet of water per second from the rapids in the lower Niagara river, near the Whirlpool, was referred to the American section by Mr. T. E. Burton, chairman of the Committee on Rivers and Harbours, House of Representatives, U.S.A. This Bill, which was really an amendment to 'An Act for the control and regulation of the waters of Niagara river for the preservation of Niagara Falls and for other purposes,' received the careful consideration of a committee and afterwards of the full Commission, and on the 3rd of March, 1908, a report was drawn up and signed to the effect that 40,000 cubic feet per second could be diverted without seriously affecting the scenic beauty of the rapids but that this amount should be equally divided between the two countries, and that, therefore, the Bill should be amended so as to grant only 20,000 cubic feet per second.

II. On the 11th of April, 1908, a treaty, entitled 'Delimitation of Boundaries Treaty,' was signed by representatives of the governments of Great Britain and the United States, and by Article IV., the International Waterways Commission was

9-10 EDWARD VII., A. 1910

charged with the responsibility of carrying out the terms of this treaty as regards the boundary between St. Regis, on the St. Lawrence river, and the mouth of Pigeon river, Lake Superior.

On the 2nd of June, 1908, the Commission met to discuss the work, and a committee was appointed to investigate and draw up a scheme.

This committee reported on the 23rd of June—

‘That the existing charts were unsuitable for the importance of the work;

‘That a uniform size of chart of 40 inches by 50 inches should be adopted, and that 30 charts would be required;

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‘That four scales should be adopted; $\frac{1}{10,000}$ for Niagara Falls and St. Mary’s

1

1

Falls; $\frac{1}{20,000}$ for rivers; $\frac{1}{60,000}$ for the wide open bays at the ends of the lakes, and

1

$\frac{1}{300,000}$ for the lakes themselves;

‘That charts should be projected on the Polyconic projection to the new United States standard datum;

‘That charts should be engraved upon copper and a duplicate set of copper plates made, so that each government might have a set.’

It was estimated that the ‘work of preparing charts, placing monuments, surveying and co-ordinating their positions and preparing a description of the boundary line would cost at least \$160,000, half to be borne by each country.’

The work of preparing the charts was started immediately in the office of the American section at Buffalo, where a staff of three draftsmen and five engravers, selected in equal numbers from each country, is at work.

Charts of Detroit river, Lake St. Clair, St. Clair river, Lake Erie, west end Lake Erie, and three of the St. Lawrence river, are nearly drafted and about half engraved. Some necessary surveying work has started along the Niagara river, to obtain a triangulation upon which to base the co-ordination of the monuments and turning points.

Several interesting discussions over the boundary have been held, both in committee and in full commission, but until the large scale charts are completed no definite decision can be arrived at.

There is still a large amount of work to do, completing the charts, placing the monuments, and tying them to the triangulation; then the preparation of the description in detail of the boundary as called for by the treaty. This work will probably occupy a further period of three years.

III. In our progress report covering our work for the calendar year ending December 31, 1907, reference is made to the proposed power works on the St. Lawrence river, near Long Sault rapids. The question was again considered by the Commission at its meeting of the 31st of October, 1908, when it was decided to consider, and, if possible, dispose of the matter at a meeting to be held in Toronto on the 20th of November, but before the latter date, a letter dated the 15th of November, 1908, was received from the Long Sault Development Company, which is the company interested in the development on the American side, stating that the St. Lawrence Power Company, Limited, which is the allied company interested in the proposed development on the Canadian side, was engaged in further surveys and studies and in preparing new plans, and that it was not the intention of the first-named company to introduce a Bill into the United States Congress until the plans for the entire project were definite and complete. However, at the meeting on the 20th of November, several deputations

SESSIONAL PAPER No. 19c

representing the vessel and timber rafting interests were heard in opposition to the project and were answered by the engineer for the power companies. Nothing further has been heard of the project.

IV. On the 23rd of December, a communication was received from the Secretary of the Department of Public Works referring to the International Waterways Commission, for consideration and report, an application from the Cedars Rapids Manufacturing and Power Company for permission to construct certain power works on the north side of Cedars Rapids, Que., and divert 56,000 cubic feet per second from the river.

The company was duly incorporated by an Act of Parliament of Canada, passed in 1904, Chapter 65, and was given power, amongst other things, to construct, develop, acquire, own, use and operate water-powers in or adjacent to the River St. Lawrence in the county of Soulanges, in the province of Quebec, and to construct, operate and maintain works, canals, race-ways, water courses, dams, piers, booms, dikes, sluices, conduits and buildings in connection with the said water-powers, provided that any work by the said Act authorized should not be commenced until the plans thereof had first been submitted to and approved by the Governor in Council.

On the 26th of January, 1909, deputations from the company were heard at a public meeting in Toronto, and on the 26th of February, a further public hearing was given to deputations from both the companies, and the Canadian Marine Association, and upon the 13th of April a report was drafted and forwarded to the Honourable the Minister of Public Works, recommending the granting of the application under certain conditions.

V. The question of the regulation of Lake Erie was one that was submitted for the consideration of the Commission by an Act of Congress approved on the 13th of July, 1902, and informally discussed by the Commission at its first meeting held in Washington, D.C., on the 25th of March, 1905. At that time a committee was appointed with instructions to gather a large amount of data bearing upon the hydraulics of the Great Lakes and connecting waters, and to draw up a report on the subject. This committee has been steadily at work and submitted on the 26th of February, a very voluminous report bearing upon the question.

This report has received a great deal of study from the other members of the Commission, was brought up for discussion at a meeting held in Buffalo on the 14th of July, and referred back for more data. This is being gathered and a survey party is now in the field.

The scheme as proposed by Mr. Wisner of the Deep Waterways Commission, was to construct at the outlet of Lake Erie, between Port Erie and Buffalo, submerged weirs from each shore connected by a series of sluices; the weirs to be of such height and combined length that, with all the sluices closed, the overflow would be equal to the low water discharge and, with the sluices all open, the discharge would be such as to keep the lake at the regulated level. In the spring and early summer, when naturally the surface rose, the gates would be opened to the full to prevent a rise above the fixed level and later in the season, when the surface was falling, the gates were to be so adjusted as to lessen the outflow and maintain the level. This would be an ideal condition for the navigation of Lake Erie if it could be arranged without entailing larger disadvantages to other interests.

VI. On the 14th of July, the attention of the Commission was drawn to the fact that the United States government were making extensive improvements in the Detroit river opposite Amherstburg, partly in Canadian waters, and that the excavated material was being dumped in our waters, to the inconvenience of many persons, without any reference to the Canadian government.

9-10 EDWARD VII., A. 1910

The Commission inquired into the matter and reported that as these improvements were for the general benefit of navigation of both countries and that Canada was not being asked to contribute anything, the United States government should be advised to ask the consent of Canada for formal permission to excavate the channel where that work is now progressing and that such permission should be granted, provision being made that the dumping ground in Canadian waters should be located under the direction of the Minister of Public Works of Canada.

VII. On the 14th of June, and again from the 19th to the 28th of July, both power houses of the Niagara Falls Power Company's plant were closed down for inspection and repairs. Between the 28th of July and the 2nd of August, No. 2 power house alone was closed.

The secretary of the American section was instructed to install gauges in the river at various points to obtain records of the effect upon the river and falls by the diversion of the considerable body of water used by that company. He was instructed to observe these gauges before, during and after they shut down.

By the diversion of the 8,000 cubic feet of water per second, he concluded that the surface of Niagara river was lowered:—

At Grass Island (near intake of Niagara Falls Power Co.)	by $3\frac{1}{4}$ inches.
Near Ontario Power Company's intake	" $1\frac{1}{4}$ "
At Willow Island	" $\frac{9}{16}$ "
At Prospect Point, crest of American Falls	" $\frac{4}{15}$ "

These results show that the American power plants divert from the Horseshoe fall a larger amount than was supposed.

The United States lake survey in 1907 determined the flow over the American fall as about five per cent of the total discharge of the river considerably less than was supposed.

The amount of water lowered on the crest of the falls is small when 8,000 cubic feet per second is being used in the American power plants.

As the gauges, near the crest of the rapids, at Willow island and near the Ontario Power Company's intake record practically the same rises in the river, viz., $\frac{1}{16}$ of an inch and $1\frac{1}{4}$ inches, it would seem to show that the same proportion holds, or that only five per cent of the 8,000 cubic feet passes over the American fall.

All of which is respectfully submitted.

THOMAS COTE,
Secretary, Canadian Section.

RAPPORT SUPPLÉMENTAIRE

DE LA

COMMISSION DES VOIES NAVIGABLES INTERNATIONALES

1909

IMPRIMÉ PAR ORDRE DU PARLEMENT



OTTAWA

IMPRIMÉ PAR C. H. PARMELEE, IMPRIMEUR DE SA TRÈS EXCELLENTE
MAJESTÉ LE ROI

1909

[No 19c—1909]

RAPPORT

AU

SOUS-MINISTRE DES TRAVAUX PUBLICS

SUR LES

TRAVAUX DE LA COMMISSION DES VOIES NAVI-
GABLES INTERNATIONALESDEPUIS LE 1^{er} MARS 1908

— — — — —

Les membres de la commission se sont réunis au complet, à intervalles réguliers d'environ un mois, alternativement à Toronto et à Buffalo.

La commission a examiné les sept sujets suivants:—

- I. Dérivation de 40,000 pieds cubes d'eau par seconde du débit du Niagara inférieur aux environs des rapides de Whirlpool.
- II. Article IV du traité signé entre les Etats-Unis et la Grande-Bretagne le 11 avril 1908, concernant la frontière entre les Etats-Unis et le Canada de Saint-Régis, Ont., à l'embouchure de la rivière Pigeon, Ont., et communément appelé "Traité de délimitation des frontières".
- III. Demande des Compagnies *Long Sault Development* et *St. Lawrence Power* en autorisation de construire un barrage sur le fleuve Saint-Laurent au pied des rapides du Long-Sault.
- IV. Pétition de la Compagnie *Cedars Rapids Manufacturing and Power*.
- V. Régulation du lac Erié.
- VI. Améliorations à la rivière Détroit.
- VII. Effet de la dérivation de l'eau par le canal de la Compagnie *Niagara Falls Power*.

I. Le 24 mai 1907, M. T. E. Burton, président du comité des rivières et des ports à la Chambre des représentants des Etats-Unis, présenta à la section américaine un projet de loi (n° 25546) relatif à la dérivation de 40,000 pieds cubes d'eau par seconde des rapides du Niagara inférieur près de Whirlpool. Ce projet qui était en réalité un amendement à la "Loi régissant le contrôle et la régulation des eaux de la rivière Niagara pour assurer la conservation des chutes du même nom et dans d'autres buts", fut examiné avec le plus grand soin par un comité, puis par la commission au complet, et, le 3 mars 1908, un rapport fut émis, dûment motivé et signé, déclarant que l'on pouvait détourner du cours d'eau une quantité de 40,000 pieds cubes par seconde sans nuire

9-10 EDOUARD VII, A. 1910

sensiblement à la beauté du site, mais que ladite quantité devait être répartie entre les deux pays, et, par suite, le projet de loi amendé par la réduction du chiffre proposé à 20,000 pieds cubes par seconde.

II. Le 11 avril 1908, un traité, dit "Traité de délimitation des frontières", fut signé par les représentants des gouvernements des Etats-Unis et de la Grande-Bretagne; par l'article IV, la Commission des voies navigables internationales fut chargée de la rédaction des termes de ce traité quant à la section de la frontière s'étendant entre Saint-Régis, sur le Saint-Laurent, et l'embouchure de la rivière Pigeon, dans le lac Supérieur.

Le 2 juin 1908, la commission commença la discussion des travaux à exécuter, et un comité fut nommé avec mission de faire les recherches nécessaires et de préparer un projet.

Le 23 juin, ce comité soumit les conclusions suivantes:—

"Que les cartes existantes étaient inutilisables vu l'importance du travail.

"Que l'on devait adopter des dimensions uniformes de 40 x 50 pouces pour toutes les cartes, lesquelles seraient au nombre de 30.

"Que l'on devait adopter quatre échelles: $\frac{1}{10,000}$ pour les chutes Niagara et Sainte-Marie; $\frac{1}{20,000}$ pour les rivières; $\frac{1}{60,000}$ pour les baies ouvertes aux extrémités des lacs; $\frac{1}{300,000}$ pour les lacs eux-mêmes.

"Que l'on devait adopter la projection polygonale selon le nouvel étalon admis pour les Etats-Unis.

"Qu'il fallait graver les cartes sur cuivre, toutes les planches devant être exécutées en double, de manière à ce que chacun des deux gouvernements puisse en posséder une série complète."

On évaluait à un minimum de \$160,000 le prix de revient de la préparation des cartes, de la mise en place des bornes et de l'établissement de leurs positions relatives, des levés et d'une description de la frontière. Cette dépense devait être supportée à part égale par les deux pays.

On commença immédiatement la préparation des cartes au bureau de la section américaine à Buffalo, composé de trois dessinateurs et de cinq graveurs choisis en nombre égal dans chaque pays.

Les cartes de la rivière Détroit, du lac Saint-Clair, de la rivière Saint-Clair, du lac Érié et de son extrémité ouest, ainsi que trois autres du fleuve Saint-Laurent sont presque entièrement dessinées et à moitié gravées. On a entrepris quelques travaux de levés le long de la rivière Niagara de manière à obtenir une triangulation susceptible de servir de base à la jonction des différentes bornes et des points de repère provisoires.

La question de la frontière a soulevé plusieurs intéressantes discussions, tant dans le comité que dans la commission au complet; mais il sera impossible d'arriver à une décision définitive tant que les cartes à grande échelle n'auront pas été achevées.

Il reste encore beaucoup à faire pour compléter les cartes, mettre les bornes en place, et relier leurs positions à la triangulation. Il faudra de plus préparer une description détaillée de la frontière comme l'exige le traité. L'exécution de ce dernier travail demandera probablement encore trois ans.

III. Dans notre rapport provisoire couvrant l'année se terminant le 31 décembre 1907, il était fait allusion au projet d'établissement de forces hydrauliques sur le Saint-Laurent, près des rapides du Long-Sault. La question revint de nouveau devant la commission au cours de sa séance du 31 octobre 1908. On décida alors de l'examiner et, s'il était possible, de lui donner une solution lors de l'assemblée qui devait avoir lieu à Toronto le 20 novembre. Mais avant cette époque, la Compagnie *Long Sault Development*, qui est la compagnie intéressée dans les exploitations sur la rive américaine, déclara dans une lettre datée du 15 novembre 1908 que la Compagnie *St. Lawrence Power*, son associée pour les opérations sur la rive canadienne, poursuivait ses

DOC. PARLEMENTAIRE No 19c

études et ses levés ainsi que l'établissement de nouveaux plans, et qu'en conséquence elle-même ne désirait présenter aucune demande de projet de loi devant le Congrès des Etats-Unis tant que les détails de la nouvelle organisation ne seraient pas absolument définis et complets. Toutefois, à l'assemblée du 20 novembre, plusieurs délégations représentant les armateurs et les négociants en bois vinrent combattre le projet, lequel fut défendu par l'ingénieur des compagnies d'électricité.

Depuis, on n'en a plus entendu parler.

IV. Le 23 décembre, on reçut une communication du secrétaire du ministère des Travaux publics renvoyant à la Commission des voies navigables internationales aux fins d'examen et de rapport une demande de la Compagnie *Cedars Rapids Manufacturing and Power*, en autorisation de construire certains ouvrages pour la production de force motrice sur la rive nord des rapides des Cèdres, Qué., et de dériver 56.000 pieds cubes par seconde du débit de la rivière.

La compagnie était dûment incorporée par une loi du Parlement canadien, en date de 1904, chapitre 65, qui lui conférait, entre autres privilèges, le droit de construire, développer, acquérir, posséder, utiliser et exploiter les forces hydrauliques du fleuve Saint-Laurent ou adjacentes à ce dernier dans le comté de Soulanges, province de Québec, et de construire, mettre en opération et entretenir tous ouvrages, canaux, coursiers, barrages, piliers de balisage, estacades, digues, vannes, conduites et bâtiments concernant ces forces hydrauliques, pourvu qu'aucun des travaux autorisés par la présente loi ne soit commencé avant que les plans aient été soumis au Gouverneur en conseil et approuvés par lui.

Le 26 janvier 1909, des délégués de la compagnie parlèrent en assemblée publique à Toronto; le 26 février, des représentants des deux compagnies ainsi que de l'Association maritime canadienne se présentèrent de nouveau dans les mêmes conditions; et, le 15 avril, le ministre des Travaux publics reçut un rapport recommandant l'octroi des privilèges demandés sous certaines réserves.

V. La régulation du lac Érié fut l'une des questions soumises à l'examen de la commission à la suite d'un vote du Congrès en date du 13 juillet 1902, et discutée en principe par elle à sa première séance tenue à Washington, D.C., le 25 mars 1905. On nomma un comité chargé de recueillir le plus d'informations possibles sur les questions d'hydraulique relatives aux Grands Lacs ainsi qu'à leurs chenaux de jonction et de dresser un rapport détaillé sur ce sujet. Ce comité se livra à des études considérables et soumit, le 26 février, un volumineux travail concernant la question.

Les autres membres de la commission examinèrent ce mémoire avec la plus grande attention, le discutèrent lors de leur réunion à Buffalo le 14 juillet, et le retournèrent au comité pour complément d'informations. A l'heure actuelle, on s'occupe à recueillir de nouveaux renseignements et une équipe de levé est encore sur le terrain.

Le projet émis par M. Wisner, de la Commission des voies navigables profondes, consistait à construire au débouché du lac Érié, entre Port-Erié et Buffalo, des barrages submergés partant de chaque rive et reliés par des séries de vannes. Ces barrages devaient avoir une longueur et une hauteur telles que, toutes les vannes étant fermées, le trop-plein se trouverait être égal à la décharge aux basses-eaux, et, toutes les vannes étant ouvertes, le débit demeurerait suffisant pour maintenir le lac au niveau de régulation adopté.

Au printemps et au début de l'été, lorsque le plan d'eau s'élève naturellement, il suffisait d'ouvrir en plein les vannes pour empêcher tout surélévement au-dessus de la cote fixée; par contre, à mesure que, la saison s'avancant, le niveau s'abaissait, on réglait les portes éclusières de manière à diminuer le débit et à maintenir la cote du plan d'eau. Ce dispositif serait l'idéal au point de vue de la navigation sur le lac Érié si sa réalisation ne devait pas entraîner des conséquences désastreuses pour d'autres intérêts.

9-10 EDOUARD VII, A. 1910

VI. Le 14 juillet, l'attention des commissaires fut attirée sur le fait que le gouvernement des Etats-Unis faisait exécuter des travaux d'amélioration considérables sur la rivière Détroit vis-à-vis Amherstburg, en partie dans la zone canadienne, et que les déblais extraits étaient jetés dans nos eaux, à la grande nuisance d'un grand nombre de personnes, et, cela, sans qu'aucun avis en ait été donné au gouvernement canadien.

La commission fit une enquête sur cette affaire. Sa conclusion fut que ces travaux d'amélioration étant exécutés pour le bénéfice commun de la navigation des deux pays, et qu'en outre, le Canada n'ayant à supporter aucune contribution de ce chef, il y aurait lieu d'aviser le gouvernement des Etats-Unis d'avoir à demander l'autorisation du Canada de continuer le creusage aux endroits où les travaux sont déjà en voie d'exécution, et d'autre part d'accorder cette autorisation sous la réserve que les emplacements destinés au déversement des déblais dans les eaux canadiennes soient déterminés par le ministre des Travaux publics du Canada.

VII. Le 14 juin, puis du 19 au 25 juillet, les opérations des deux usines hydro-électriques de la Compagnie *Niagara Falls Power*, furent suspendues pour cause d'inspection et de réparations. Du 28 juillet au 2 août, l'usine n° 2 seule est demeurée fermée.

Instructions furent données au secrétaire de la section américaine d'installer en différents endroits du cours d'eau, des échelles permettant de relever les effets produits sur la rivière et les chutes par la dérivation des quantités énormes d'eau consommées par la compagnie. Les observations devaient être prises avant, pendant, et après la période du fonctionnement annuel.

Il constata qu'une dérivation de 8,000 pieds cubes par seconde abaissait le niveau de la rivière Niagara dans les proportions suivantes:—

A Grass-Island (près de la prise d'eau de la Compagnie <i>Niagara Falls Power</i>)	de 3 $\frac{1}{4}$ pouces.
Près de la prise d'eau de la Compagnie <i>Ontario Power</i> "	1 $\frac{1}{4}$ "
A l'île Willow	" $\frac{1}{8}$ "
A Prospect-Point, crête des chutes américaines	" $\frac{1}{8}$ "

Ces chiffres démontrent que les usines hydro-électriques américaines empruntent à la *Horseshoe Fall* des quantités d'eau plus considérables qu'on ne le suppose.

En 1907, le service des levés des lacs aux Etats-Unis établit que le débit à la chute américaine était d'environ 5 pour 100 de la décharge totale de la rivière, par conséquent bien inférieur à ce qu'on l'estimait.

La diminution du débit à la crête des chutes est faible lorsque la consommation des usines hydro-électrique américaines atteint 8,000 pieds cubes par seconde.

Les échelles placées près de la crête des rapides, à l'île Willow et près de la prise d'eau de la Compagnie *Ontario Power*, accusent pour la rivière des fluctuations presque identiques, soit de $\frac{1}{8}$ de pouce et de 1 pouce et un quart.

Cela semble démontrer que les proportions se maintiennent les mêmes, c'est-à-dire que 5 pour 100 seulement des 8,000 pieds cubes considérés passe par la chute américaine.

Le tout respectueusement soumis.

THOMAS COTE,
Secrétaire de la section canadienne.

RETURN

(19e)

DENVER, COLORADO, September 18, 1909.

W. F. KING, Esq., LL.D., C.M.G.,
Chief Astronomer,

Department of the Interior,
Ottawa, Ontario, Canada.

DEAR SIR,—I have the honour to submit herewith my report on the 'Treaty with the United States relating to Boundary Waters and Questions arising along the Boundary between Canada and the United States, signed at Washington, January 11, 1909.'

As frequent reference is made therein to my report to you, of date April 22, 1908, on the same subject matter. I have attached copy of that report hereto.

Respectfully submitted.

GEORGE G. ANDERSON,

Consulting Engineer,
Mem. Can. Soc. C.E.
Mem. Inst. C.E.
Mem. Am. Soc. C.E.

REPORT ON TREATY RELATING TO BOUNDARY WATERS AND QUESTIONS ARISING ALONG THE BOUNDARY BETWEEN CANADA AND THE UNITED STATES.

Thorough and careful consideration of the provisions of the 'Treaty with the United States relating to Boundary Waters and Questions arising along the Boundary between Canada and the United States, signed at Washington, January 11, 1909,' so far as these provisions affect the waters of the St. Mary and Milk rivers and their tributaries, compels the conviction that they are greatly unjust to the interest of Canada, and for the following reasons.

(a) The 'equal apportionment' provided for does not take cognizance of the relative area possible of reclamation in each country and, consequently, does not 'afford a more beneficial use to each'—but only to the United States.

(b) Such apportionment does not recognize, as a vested right, the prior appropriations made by Canada on the St. Mary river.

(c) Such apportionment does not provide for a periodic division of the waters which only can result in 'a more beneficial use to each.'

(d) Such apportionment does not provide Canada with a fair compensation for the valuable consideration granted to the United States—the use of the channel of the Milk river for the conveyance of water for irrigation purposes.

9-10 EDWARD VII., A. 1910

(e) The treaty fails to provide any compensation to Canada for the maintenance of the channel of the Milk river, or any clearly defined and adequate means of redress in the event of injuries that will inevitably result from its use by the United States in the manner provided.

(f) The composition of the International Joint Commission is defective and there is lack of provision of methods for its guidance and operation.

It will be the purpose in the following review and report to consider these and all other features of this most important matter, fully and in detail, in order that every item may be adequately presented and carefully weighed, before the government of Canada finally decides upon a settlement of policies that will have vital and far reaching effects upon the present and future welfare of Southern Alberta.

Before, however, considering the general effect of the conditions proposed in the treaty, it may be advisable to refer to some details which have been apparently misunderstood.

It would appear, first, that it has been understood that, although the Alberta Railway and Irrigation Company have a commitment of 2,000 cubic feet per second against the St. Mary river, they never could develop more than 800 cubic feet per second, because the spring waters are speedily exhausted and that there is a very small amount of water available during the summer.

The facts are that the company operates under an authorization of date May 3, 1899, granting it 500 second feet of the low flow and 2,000 second feet of the high or flood flow of the stream, with fifteen years from October 23, 1902, in which to complete its work. At the present time, the company have a canal system capable of diverting 800 cubic feet per second from the St. Mary river, and thereby have developed 40 per cent of their authorization in 47 per cent of their allotted time, seven years out of 15.

Considering the normal stream flow, as shown on Table A, page 54 of this report, the mean discharges, during the irrigation season from April 1 to November 1 are as follows:—

April..	679.5	cubic feet per second.
May..	1,798.4	" "
June..	3,864.4	" "
July..	2,301.5	" "
August..	1,039.9	" "
September..	679.0	" "
October..	591.0	" "

From that, it will be seen that the stream affords an ample supply of water in every month of the irrigation season to satisfy the authorization of 500 cubic feet per second of the low flow and in May, June and July practically the authorization of 2,000 cubic feet per second of the high or flood flow with the normal flow in May slightly below that amount and that of June nearly twice the necessary quantity.

In the practical operations of an irrigation system, the full volume is not actually required in every month of the irrigation season. I have elsewhere shown that the company rarely flow water through their canal system prior to May 1, and with the full volume supplied during May, June and July, the actual requirements would decrease to 50 per cent in August and to 20 per cent in the other months of the season.

I would call attention to the remarks made by me in my report to Dr. King, April 22, 1908, on the position of the Alberta Railway and Irrigation Company. It would not have been the part of ordinary commercial prudence for them to construct a canal to the full capacity of their authorization at the inception of their enterprise. The country to be irrigated was then an unsettled desert, irrigation was, in a sense, experimental, and years would have elapsed, as has been shown,

SESSIONAL PAPER No. 19e

before full demand was made on that capacity, and there would have been a long interval with a large investment in part unproductive. They did begin with a canal capacity of 400 second feet, have now enlarged it to a capacity of 800 second feet, keeping pace with the actual demands made upon them by the requirements of the settlers, and could proceed with development on that sound basis to the limit of their authorization.

The effect upon their enterprise of conditions that now limit them to 500 cubic feet per second, in place of their actual development of 800 feet, must be at once recognized and will be more fully considered later in this review.

It is sufficient, for the moment, to have pointed out that it is not because of the exhaustion of the stream flow in the summer months but because of the exercise of ordinary business prudence and the time required in the upbuilding and settlement of great areas, that a greater development than 800 cubic feet per second has not been made at this time.

And I may incidentally mention that the flows of the stream quoted above and incorporated in the tables prepared are from data in the reports of the United States bureaus, which I do not think, for reasons elsewhere given, quite accurately state the river discharge within Canadian territory.

It has also been understood, apparently, that when these storage works proposed to be constructed by the United States at the headquarters of the St. Mary river, are completed, the Canadians will have the benefit of them and will have a store of water to draw from during the summer, in place of having it now only during the spring and fall.

The quantities of the normal flow of the stream, during the irrigation season, show, on the contrary, that there is an ample supply during the summer months,—that is, May, June and July, for the full amount of the authorization. It would be during these months that the flood or excess waters would be stored. Even August would supply 50 per cent of the full authorization, sufficient for real requirements at that time, and for the rest of the season the normal flow would be adequate for the actual necessities, if these were based only upon a development of the area irrigable by the full amount of the authorization—2,000 second feet.

But no broad conception of the development under the authorization can be had that does not or did not contemplate the ultimate storage of flood waters of the St. Mary river, as a Canadian enterprise itself.

There is, however, nothing in the treaty that would indicate that Canada would enjoy any benefit in the reclamation works, the storage works, proposed by the United States, or would thereby have a store of water to draw upon during the summer.

Such a thing is certainly not contemplated by the United States, though both the second and third annual reports of the reclamation service for 1902-3 and 1903-4 contain this paragraph:

To thoroughly settle the question of water diversion from St. Mary river and Milk river, it will probably be necessary to come to some international agreement with Canada. This country has the advantage of storage in St. Mary lakes by the construction of the St. Mary dam in which the flood waters of this stream can be conserved and afterwards used for irrigation purposes. An agreement might be made with the Canadian government to allow to pass down, without diversion, the water turned into Milk river, on condition that the Canadian canal from St. Mary river will be furnished sufficient water from the St. Mary reservoir.

But, if the United States ever seriously considered an agreement of that kind, it was to reject it. A later official communication contained the provision that
19e—1½

9-10 EDWARD VII., A. 1910

Canada should allow to pass down without diversion, the water turned into Milk river, but withdrew the countervailing provision of sufficient water from the St. Mary reservoir.

In the communication from Elihu Root to the Governor General, June 15, 1907, clause 8 reads as follows:

That Canada shall, in no event, divert from the Milk river any portion of the stored St. Mary river water turned into the Milk river system by the United States, due allowance being made for losses by evaporation and seepage, while passing through the channels of the Milk river system as fixed by the commission provided for in paragraph 14.

And nowhere, in that communication or any other document, is any proposal made that the United States will turn down the St. Mary river from the St. Mary reservoir any water stored by it.

From that, it would seem to be abundantly manifest that there is no provision for Canada sharing the water stored by the United States.

The treaty proposes, in broad terms, that there shall be an equal apportionment of the waters of the rivers; that the United States shall own and control, for its own use, one-half of the water of the St. Mary river and the Milk river, which it proposes to store and ultimately use within its own territory. It does not propose to store any water it can secure from the St. Mary river, under arrangement with Canada, and ultimately permit Canada to draw upon that stored supply.

Canada may take its own half of the water of the St. Mary river, in which, under one reading and probably the correct reading of the treaty, shall be included the 500 cubic feet per second conceded to it as a prior appropriation,—and do with that one-half of the water what it pleases; use it in direct application, store it for future use, or allow it to pass down the stream to be ultimately 'lost in Hudson Bay.' But Canada will have, in the event, no claim upon any water of the stream or streams diverted or stored by the United States.

It has apparently been concluded that it would be impossible for the United States to join these two streams into one without the construction of the storage reservoir at St. Mary lakes.

This is an entirely erroneous conception of the situation.

I am thoroughly familiar with the district in all its bearings on this proposed diversion of water from the St. Mary river to lands in eastern Montana through the channel of Milk river and know absolutely that such diversion can be made without raising the level of the bed of the St. Mary river at the point of diversion, and without creating a storage reservoir by the construction of any embankment or dam.

Such, indeed, was originally contemplated by the United States.

In the report of the 'Hearings before the Committee on Public Lands of the House of Representatives, January 11 to 30, 1901,' Mr. F. H. Newell, who was then Chief of the Division of Hydrography, U.S. Geological Survey, said, page 51:—

In northern Montana, the principal project is not a water storage plant, but the diversion of the St. Mary river, which receives water from the snow covered summits of the high Rockies and carries it north into Canada. By a comparatively short canal, one which does not offer any great engineering difficulties, the headwaters of that stream can be taken out and turned into the headwaters of the Milk river, which flows easterly and enters Missouri river in eastern Montana.

And, on the next page, 52, Mr. Newell gives an estimate of the cost of the first nine miles, the only portion then cross-sectioned, in a total of \$325,000, in which is included \$10,000 for 'dam and head-gates'—which is merely for diversion dam and regulating head-gates of a diversion canal only.

SESSIONAL PAPER No. 19e

In 1902, the Senate Committee on the Reclamation of Arid Lands published a report, No. 254, which opens thus:—

The proposed St. Mary diversion canal is for taking water from the St. Mary river, in northern Montana, and carrying it across gravel ridges to the headwaters of Milk river.

And in all that follows in that report there is no mention of a storage reservoir on the St. Mary river.

Early in 1902, and a very short time after the publication of Report No. 254, the Geological Survey published 'a condensed statement taken from the report on the St. Mary canal project' which contains the first reference to storage on the St. Mary and reads as follows:—

The St. Mary project is designed to store flood waters in the St. Mary lakes in northern Montana and conduct these easterly by a canal cut through the ridges at the head of Milk river.

Further along, in the said 'condensed statement,' the following occurs:—

It is proposed to build a low storage dam at a point about three-fourths of a mile below the present outlet of lower St. Mary lake. This dam will have a maximum elevation of 50 feet above the bottom of the river and will form a reservoir of a capacity of 250,000 acre feet.

And still further on, in the 'Estimated Cost of St. Mary Dam and Canal to North Fork River'—the cost of this dam is given as \$22,000.

In the 'First Annual Report of the Reclamation Service from June 17 to December 1, 1902, issued early in 1903, the statement is made, page 206, that,

An examination of St. Mary lakes and rivers was begun in 1900 by Mr. Gerard H. Matthes, and it was ascertained that a diversion canal could be carried over the divide to the headwaters of the Milk river.

Further, pages 207 and 208, a statement is made of the reservoir that can be created at the St. Mary lakes, in exactly the same words as quoted above from the 'condensed statement.'

From that time, each succeeding report of the Reclamation Service refers to the storage at St. Mary lake in the same general terms and usually in precisely the same language until the sixth report for 1906-1907, when, for the first time, the reduction of the height of dam and capacity of the reservoir is indicated, as follows:—

It is proposed to build a low storage dam about three-quarters of a mile below the present outlet of lower St. Mary lake. The dam will have a maximum elevation of 45 feet above the bed of the river. The effective height will be 30 feet. The reservoir thus created will have a capacity of 150,000 acre feet. (Page 115.)

It is undoubtedly a fact that it is physically possible for the United States to build a canal from the bed of St. Mary river to the headwaters of the Milk river that will divert directly, without the necessity of any storage works, all the water

NOTE.—There is so much in this 'condensed statement' that is well worth perusal, though it may not be pertinent to the consideration at the present time, in view, alone, of the change of thought that has occurred in the interval, that it is attached hereto as Appendix.

Attention is especially directed to the statements that 'it is not believed that any international complication can arise concerning water rights, since the water which it is proposed to store and divert occurs wholly within Montana, and it would be impossible for the Canadians to store and utilize this flood water, even if needed in their canal,' and that

'Milk river in Canada from the junction of the North and South Forks down stream, has a very slight fall, not more than two feet to the mile, and a canal of 100 miles or more in length would be necessary before the water could be brought to the upper benches. It is not therefore, considered feasible to divert the waters from Milk river in Canada.'

9-10 EDWARD VII., A. 1910

to which it would be entitled from the St. Mary river in the equal apportionment provided by the treaty.

The treaty does not make it obligatory upon the United States to construct a reservoir or reservoirs at the St. Mary lakes, or elsewhere; it was probably never contemplated that any such obligation should be a condition precedent to the agreement.

The character of the stream flow is such that, during the irrigation season only, the United States, if it so desired, would be able to secure its share of the St. Mary river, on the terms of the treaty, by direct diversion simply and without any storage at St. Mary lake, or partly by direct diversion and partly by storage in total quantity less than the lowest reservoir capacity recently considered by the Reclamation Service.

These features will be considered in detail and at length later. Meantime, their presentation has probably been sufficient to suggest the position of Canada and Canadian users of water on both the streams affected. The St. Mary river in Canada could be greatly depleted in volume during the irrigation season, during the summer, and the Milk river greatly augmented in volume, without any benefit to any interest in Canada above what is possessed to-day.

The first paragraph of Article 6 of the treaty states that the 'equal apportionment' is provided 'so as to afford a more beneficial use to each' of the High Contracting Parties.

That beneficial use can best be secured by consideration of the relative areas in each country, that can be reclaimed by irrigation.

It is because the water supply of the Milk river in Montana is at present inadequate for the needs of the area irrigable by it, that the United States seeks to increase that supply by the addition of waters stored on or diverted from the St. Mary river.

The extent of that area can only be ascertained from the reports of the United States Reclamation Service and in these reports has been variously stated at various times.

In the seventh and latest annual report of the Reclamation Service for 1907-8, it is stated as follows:—

Irrigable area, 200,000 acres. Ownership 10 per cent public, remainder private.

In the sixth report, for 1906-7, it is given, thus:—

Irrigable area, 250,000 acres, in the valley of the Milk river. Ownership of land: 50 per cent government land; 50 per cent in private ownership.

In the fifth report, for 1905-6, in the 'Summary of Data,' it is stated:—

Irrigable area, 200,000 acres, extending 150 miles along valley of Milk river.

While, in the body of the report there is the following:—

The Milk river project as surveyed includes over 250,000 acres divided into two divisions, (1) 91,000 acres near Chinook and Harlem, (2) 159,000 acres extending from the Dodson diversion dam eastward to Glasgow.'

But, in a table of the 'distribution of lands' immediately below the statement quoted above, it is given as

SESSIONAL PAPER No. 19e

General Lands.

	Acres.	Per cent.
Total..	250,000	..
Private..	121,000	48
Public..	129,000	52
Irrigable..	215,000	86
Non-irrigable..	35,000	14

While, in the two divisions, there is given

	Acres Irrigable.
Chinook system..	77,000
Dodson system..	143,000

Total.. 220,000

as compared with 215,00 acres irrigable in the general statement.

That area had previously been considered by me (see my report to Dr King, April 22, 1908 (page 41) as the extent of the irrigable acreage in the United States, but it would appear to be proper to now limit that to 200,000 acres in view of the later report.

At pages 2 and 3 (report to Dr. King, April 22, 1908) I made the following statement, from the actual surveys made under my own supervision, while acting as consulting engineer for the Alberta Railway and Irrigation Company:—

Surveys were projected which developed the fact that, tributary to the canal system projected from the St. Mary river there were 450,000 acres capable of irrigation and under the system from Milk river,—180,000 acres.

That means that there would be a total area of 630,000 acres susceptible of irrigation from these streams within Canadian territory.

The relation of apportionment of the water supply should consequently be, for 'the most beneficial use to each.'

United States..	200,000 acres.
Canada..	630,000 "

To ascertain the mean volume of water available from both the St. Mary and Milk river, I have, in addition to the Tables A and B in report to Dr. King, April 22, 1908, drawn up Tables A and B attached to this report.

These embrace the latest information of the stream flows up to the end of the year 1908 and vary slightly from those previously submitted. as they have been affected by the volumes in the additional years.

There would then be available, normally

From St. Mary river..	769,374 acre feet.
From Milk river..	231,820 "

Total.. 1,001,194

One-half of that amount, 500,597 acre feet, would represent, upon the 200,000 acres irrigable in the United States, a duty of water of $2\frac{1}{2}$ acre feet per acre per annum; upon the 630,000 acres irrigable in Canada, a duty of water of less than 0.8 (eight-tenths) of an acre foot per acre per annum, or the United States would secure a water service three times the efficiency of that secured by Canada.

In all of the reports of the Reclamation Service which refer to the Milk river project, the requisite duty of water is stated at 2 acre feet per acre per annum, though in the sixth annual report, page 11, it is said:

9-10 EDWARD VII., A. 1910

The average duty of water, from measurements taken on private canals, is 18 inches.

or $1\frac{1}{2}$ acre feet per acre per annum.

In this 'equal apportionment' of the waters of the combined streams, the United States secures 25 per cent more water than the Reclamation Service officers are of opinion is requisite for the ultimate area irrigable in the project.

Canada secures only 40 per cent of the requisite amount. If the duty of 2 acre feet per acre per annum is the volume necessary for successful cultivation, 250,000 acres only can be reclaimed in Canada. Southern Alberta, in other words, must abandon all hope of reclaiming 380,000 acres of land.

It may be suggested that the United States can irrigate an additional 100,000 acres in the Blackfeet Indian reserve directly from the St. Mary river, by the 'St. Mary Project.' Upon that subject, however, the seventh annual report of the Reclamation Service, for 1907-8, says, page 111:

If satisfactory arrangements can be made with Canada for carrying through Milk river in that country waters diverted from the St. Mary river, in the United States, into the headwaters of the Milk river, the irrigation features of the St. Mary project will be abandoned.

It may also be suggested that Canada could not, in any event, provide sufficient water supply for 630,000 acres. Table E, page, 66, (report to Dr. King, April 22, 1908) shows the combination of the mean flows of the St. Mary and Milk rivers, and the distribution of water between Canada and United States, on a fair and equitable basis. On such distribution, Canada would secure 601,681 acre feet, for an area of 630,000 acres, or a duty of 0.95 acre feet per acre per annum, while the United States would secure 338,900 acre feet for 200,000 acres, or practically 1.7 acre feet per acre per annum, which is in excess of the 18 inches duty of water found on private canals in the United States.

Table F, page 67, of the same report, shows the combination of flows of the St. Mary and Milk rivers in 1903, a year of maximum discharge, in which Canada, on the same fair and equitable distribution, would receive 808,990 acre feet for 630,000 acres, or a duty of 1.28 acre feet per acre, while the United States would receive 604,820 acre feet for 200,000 acres, or a duty of 3.02 acre feet per acre.

With conditions as they are, the St. Mary river alone discharges a mean flow of 769,374 acre feet and a maximum flow of 1,107,294 acre feet, as in 1903, which would give 1.22 acre feet and 1.76 acre feet for 630,000 acres.

It has been assumed by the United States, as evidenced by the official reports, that Canada has no opportunity within its own territory to store water.

In the 'condensed statement,' already quoted from and attached as an appendix, it is said:

It is not believed that any international complications can arise concerning water rights, since the water which it is proposed to store and divert occurs wholly within Montana, and it would be impossible for the Canadians to store and utilize this flood water, even if needed in their canal.

This statement was modified in the fourth annual report, page 179.

It (the Alberta Railway and Irrigation Company) has also under construction the development of a storage system. There are no reservoirs directly on the two main streams, but there are a number throughout the area controlled by the canals. The system as at present constructed does not utilize these reservoirs, but it may be possible to utilize them by enlarging the canals at considerable expense.

At pages 3 and 4, my report to Dr. King, April 22, 1908, I have given a statement of the reservoir sites known in Canada, showing a total capacity of 589,889

SESSIONAL PAPER No. 19e

acre feet, with some not then surveyed. The cost of development of these will be reasonable and the cost of enlargement of the canal system to fill them, which would be, in any event, part of the development to reclaim the area of 630,000 acres, would be low, and much less than that being incurred by the United States in similar projects in Montana and elsewhere.

That total area in Canada can be economically reclaimed by irrigation, and the water supply of the St. Mary and Milk rivers is ample for that purpose, making ample allowance for the vested rights of prior appropriations within the United States. The amount of water which will be secured by Canada, under the provisions of the proposed treaty, will be inadequate for that area and will be an inequitable division in relation to the possible areas reclaimable in each country.

The treaty does not recognize, as a vested right, the prior appropriation of Canada on the St. Mary river.

It apparently does so in the statement 'that Canada is entitled to a prior appropriation of 500 cubic feet per second of the flow of the St. Mary river,' but the recognition is more apparent than real, as the following words show, 'or so much of such amount as constitutes three-fourths of its natural flow.'

If Canada is entitled to a prior appropriation of 500 cubic feet per second, it would be entitled, during the irrigation season, at least, to all of the natural flow of the St. Mary river that was not in excess of that amount. That proposition is so axiomatic in the arid region as to require no argument.

When the treaty provides for an amount three-fourths of the natural flow of the stream to satisfy a 'prior appropriation,' it thereby fails to recognize the doctrine of priority of appropriation.

A few quotations on this feature from 'Mills' 'Irrigation Manual' are submitted:—

The fundamental principle of the customs and decisions prior to the enactment of any statutes governing the appropriation of water was 'first in time, first in right.' This idea of priority in point of time giving priority in point of right, has been made the basic principle of the irrigation law in all the legislative enactments in the arid and semi-arid states and territories. It becomes accordingly, the basic principal also of the doctrine of appropriation. (Section 54.)

As between those using water for the same purpose, priority of use gives the better right irrespective of the mode of diversion. (Section 56.)

Under the early rules and customs, the date of the appropriation, which also was the date of the priority, was fixed by the time an application of the water was made to a beneficial use. This rule or custom soon changed so that the date of priority was fixed not by the time the water was first beneficially applied but by the time when the work of construction was commenced; provided the work was diligently prosecuted and the water was beneficially applied within a reasonable time. (Section 57.)

The greater weight of authority is in favour of measuring the appropriation by the amount of water actually applied to a beneficial use, within a reasonable time. . . . The last rule, and one which can be applied to every appropriation, is that an appropriator should not be entitled to divert more water than with economy he can beneficially use for the purposes for which the appropriation was made. (Section 58.)

A prior appropriator does not acquire any title to, nor ownership of, the waters running in the natural channel of the stream; he does acquire, however, a right to the use of the water to the extent of his needs. . . . He is entitled to the natural flow of the stream to the extent of his priority undeteriorated in quality and undiminished in quantity. (Section 60.)

9-10 EDWARD VII., A. 1910

I have discussed the position of the Alberta Railway and Irrigation Company, as a prior appropriator on the St. Mary river, at some length in my report to Dr. King, April 22, 1909, pages 42 to 47, inclusive, and suggest the careful consideration of that discussion in this connection.

I would draw particular attention to the phrase there quoted from a letter from the Hon. John Hay, then Secretary of State, of date 29th of December, 1902:

It is proposed to deal with this matter in strict conformity with the laws concerning the rights to the use of water as recognized by the courts of the arid region both on this side of the international boundary and on the other.

And I would once refer to the report of the consulting engineers, Messrs. Davis, Wisner and Savage, third annual report, page 306, in which they say:

It should also be emphasized that any recognition of rights for the diversion of water from Milk river are necessarily subject to the prior rights of inhabitants of Milk River valley, in Montana. . . . Neither the American nor the Canadian government has the right to interfere with prior appropriations either from St. Mary or Milk river.

Also, the communication from Elihu Root, Secretary of State, to the Governor General, June 15, 1907, contains the following:

4. That the period in each year not specified in paragraph 2, the United States may divert or hold back in storage reservoirs any portion of the material flow of St. Mary river; and Canada may divert any portion of the natural flow of Milk river: (In neither case to interfere with existing rights.)

And in response to that communication from Ottawa, addressed to Mr. F. H. Newell, undated, copied in my report to Dr. King, April 22, 1908, the following occurs:

Such agreement, it is believed, to secure acceptance by the people of both countries, and to fulfil its purpose of obviating all possible future contentions can best be based upon the principle of equal sharing of benefits to be derived from these International rivers, after due provision has been made for existing rights, and it is recognized that the proposal of the Secretary of State has been framed with the intention that the two countries shall stand upon an equal footing as to the use of these waters.

And it is now submitted that the proposals of the treaty under consideration are not in strict conformity with the rights to the use of water, that they do interfere with prior appropriations and do not make due provision for existing rights, certainly not for the Canadian appropriation on the St. Mary river.

That appropriation, as I have shown in report to Dr. King, would be recognized in any court of competent jurisdiction up to the full claim of 2,000 feet, and certainly to that of 1,400 second feet, which would be the least amount necessary to irrigate 210,000 acres directly tributary to it, and with due regard to diligence in the application to beneficial use. At the present time, the canal has a capacity of 800 second feet, and even that is not recognized by the treaty, which provides for only '500 cubic feet per second . . . or so much of that amount as constitutes three-fourths of the natural flow of the stream.

In the first place, the determination of the amount of the Canadian appropriation from the St. Mary river at 500 cubic feet per second is not just to Canada, it is not in accordance with the rule that the 'appropriator should not be entitled to divert more water than, with economy, he can beneficially use for the purposes for which the appropriation was made, 'nor is it in accordance with the facts. The appropriator can show that he can to-day beneficially use for the purposes for which the appropriation was made, more water than is stipulated in the treaty.

SESSIONAL PAPER No. 19e

It would appear, indeed, as if this determination of the prior appropriation from the St. Mary river had been made solely by the Reclamation Service officers of the United States, without any consideration of the claims of the Canadian appropriator, denying him, in brief, his 'day in court,' and largely for the purpose of giving a colour of equality with the appropriations of the United States from the Milk river, the manipulation of which will be fully considered later.

In the second place, the provisions of the treaty do not actually recognize even this 500 second feet as a prior appropriation, as an existing right.

It is incorporated in the 'equal apportionment' of the waters of the stream. At first perusal that is not apparent, probably because one had become accustomed to think of any division of the waters being made, after providing for such existing rights.

The treaty unquestionably means that 'for the purposes of irrigation and power,' the waters shall be 'apportioned equally,' but Canada shall be entitled first to draw, during the irrigation season, 500 second feet from the St. Mary river, out of its apportionment.

That amount of water, throughout the irrigation season of 214 days, from April 1 to October 31, represents 214,000 acre feet.

The total mean annual discharge of the St. Mary river is, as previously stated, 769,374 acre feet, one-half of which is 384,687 acre feet, so that according to the proposals of the treaty, the share of the St. Mary river water given to the United States is 384,687 acre feet, and the share to Canada, 384,687, less 214,000 acre feet, or 173,687 acre feet.

The 214,000 acre feet is not a chattel disposable by either the United States or Canada, it is the property of the appropriator who has acquired 'a right to the use of the water to the extent of his needs.' The Canadian appropriator can only be denied that right by the United States attempting to exercise the right of sovereignty over the waters of a flowing stream within its territory, which would seem to be avoided, at least, in the various official utterances quoted and which has been scrupulously ignored in the somewhat similar controversy with Mexico on the southern boundary.

It may be assumed, *prima facie*, that, in this regard, Canada and the United States are placed upon the same footing, each with 'a prior appropriation' of 500 cubic feet per second.

A very little consideration will show, however, a very great difference.

In the communication of Elihu Root, Secretary of State, to the Governor General, June 15, 1907, paragraph 9, reads as follows:—

The share of the United States shall in any event include so much of the available natural flow of the Milk river as shall be judicially determined as having been applied to beneficial use on or before November 1, 1905, by the canal systems taking water from the lower Milk river in Montana, the same to be measured at the intakes of said canal systems, and whenever one-half of the natural flow of the Milk river shall be less than such amount measured as aforesaid, the share of Canada shall be diminished so that said country shall receive of the natural flow of the entire Milk river system only the excess, if any, beyond such amount of the decreed beneficial use. It is understood that the amount of water heretofore diverted for beneficial use from Lower Milk river in Montana as being in excess of 350 cubic feet per second, when the same was available.

In my report to Dr. King, April 22, 1908, I considered this feature, pages 48 to 50, incorporating tables from reports of the Reclamation Service which showed 'measured capacities' of private canals from the Milk river in the United States, in a total amount of 359 cubic feet per second and advising that Canada should

9-10 EDWARD VII., A. 1910

have, or should certainly claim the right to be heard upon the judicial determination of these appropriations. The necessity for the exercise of that right will be very plain from the recital of what has transpired in this connection in the interval.

In the third annual report, Reclamation Service, page 300, it is found that

There are a number of small private systems of canals out of Milk river near Chinook. The Chain Lakes Reservoir will be above here, and it will, therefore, be necessary to adjudicate these vested rights before construction is started. In the fourth annual report, page 183, it is stated that

A lawsuit for the adjudication of the water rights of these canals and others in the Milk River valley is now pending.

In the fifth annual report, page 153, is devoted to a recital of the regulation of the water in the Milk river during 1906, by the Reclamation Service, at the request of a committee of the private canal owners, pending a legal decision, the federal court having passed on one case only at that time.

In the sixth annual report, page 113, it was stated that,

Before the United States can safely begin any extensive works in the valley, it is necessary that the legal status of these various canals be determined.

The Appellate Court had confirmed the decision of the lower court in the Fort Belknap Indian case, and it was then before the Supreme Court of the United States; and,

On account of this federal suit, the private suit above referred to for the adjudication of the water rights of the entire valley has been postponed until a decision has been handed down from the Supreme Court.

In the seventh annual report, pages 108 and 109, this feature 'Adjustment of Water Rights' is considered at length and the following excerpts are made:

At the time authority was given, in March, 1908, for construction work on this project, it was understood that a general adjudication of the rights of all private canals would be necessary in order to determine the order of their priorities, but more especially to establish the amount of water to which each ditch was entitled. In order to avoid the expense and delay that would necessarily result from an adjudication of these rights by suits at law, as well as to expedite the construction of the Dodson system, certain articles of agreement were drawn under date of May 28, 1908, between various private canal companies in the vicinity of Chinook and Harlem, parties of the first part, the Upper and Lower Milk river water users' associations, parties of the second part, and the United States, party of the third part. This agreement provides in effect that as soon as an adequate supply of water shall be provided in the channel of Milk river from St. Mary river, or elsewhere, the owners of the various private canals will execute and deliver to the United States conveyance of their present water rights, dams, ditches, reservoirs and structures covering lands in the Milk River valley susceptible of irrigation from the proposed government irrigation systems. . . . The agreement further provides that the present appropriations of the ditch owners shall be measured by the maximum capacities of their ditches as estimated in the following table, and that the acreage hitherto irrigated shall be considered those shown on the table.

SESSIONAL PAPER No. 19e

Company.	Canal Capacity sec. feet.	Acres irrigated.
Fort Belknap Canal & Irrigation Co..	130	10,900
Winters, Anderson Ditch Co..	12	440
Paradise Valley Ditch & Irrigation Co..	19	1,400
New Harlem Irrigation Co..	73	7,820
Cooks Irrigation Co..	50	2,700
Matthewson Ditch Co..	28	1,715
West Fork Ditch Co..	13	800
Fort Belknap Indian Canal.. . . .	125	.....
Total.. . . .	450	25,755

Of that total quantity of 450 second feet, the first four and the last named ditch, only, draw water directly from Milk river, the others, in a total quantity of 91 second feet, draw from tributaries, leaving 359 second feet only, as prior appropriations from Milk river.

With prior appropriations amounting to 359 cubic feet per second, arrived at not by judicial determination but by private arrangement between parties, why should the treaty provide for 500 feet per second? It is important to remember in this connection that Canada has a subsequent appropriation on the Milk river, in the canal of the Alberta Railway and Irrigation Company on that stream, which can no more be ignored, in this apportionment of the waters of these streams, than the Canadian prior appropriation on the St. Mary river and the American prior appropriation on the Milk river. And the effect of swelling the American prior appropriations from the Milk river from 359 to 500 cubic feet per second will prejudicially affect the amount of water ordinarily obtainable by the Canadian appropriation.

During the irrigation season, there are only four months, April, May, June and July, during which the American appropriation of 359 cubic feet per second can be fully satisfied from the mean flow of the stream, and only three, April, May and June, when 500 cubic feet per second could be secured. And, while in the former case, the Canadian appropriation could receive, in the four months, 66,105 acre feet, in the latter, it would only receive 38,948.8 acre feet. (See Table C, which has been drawn up to show the effect of this difference in volume).

And it is only during these irrigation months, and only in these three or four mentioned, that the Canadian canal would be of any benefit to Canadian interests. It was designed and built solely for the purpose of diverting the flood waters of the stream during these months and storing them in reservoirs for use later in the season. It has a capacity, now, of 330 cubic feet per second and was designed not to interfere with American prior appropriations. That full capacity during April, May, June and July would represent a supply of 80,520 acre feet, of which, on the proposals in the treaty, with 359 second feet of prior appropriations, it would be able to secure 82 per cent, with 500 second feet, only 48½ per cent.

And, from the physical situation, it would not be able to secure more, even under the provisions of the treaty, as Canada is not in the position occupied by the United States of availing itself fully of the provision that more than one-half from one stream and less than one-half from the other. It has no connecting diversion canal, and while a greater portion might be taken by Canada from the St. Mary river, that water might, in all probability, be more beneficially required under the Milk river system in Canada. On that feature, more will be said in connection with the arrangement for carrying out the provisions of the treaty on the division of the waters.

It must be very plain that, while the Canadian prior appropriation on the St. Mary river has been determined, for the purposes of this treaty, at 37½ per cent less than the actual carrying capacity of the canal at this time, (500 compared to 800 cubic feet per second) the American prior appropriation on the Milk river has been determined at 39 per cent more than the actual carrying capacities of the canals dependent upon it. And that, not by the ordinary means of judicial investigation, but by private arrangements between the canal owners and the United States authorities.

It will also be very plain, of course, that the first water to be diverted from the St. Mary river, (note: the agreement does not say St. Mary reservoir) into the Milk river, is to be applied to making good existing claims, for which, ordinarily, the Milk river does not now furnish sufficient flow, as indicated in the last sentence of paragraph 9 of Secretary Root's communication. 'It is understood that the amount of water heretofore diverted for beneficial use from Lower Milk river in Montana as being in excess of 350 cubic feet per second, when the same was available.

It will be singularly unfortunate if Canada is committed to the 'equal apportionment' of the waters of those two streams, as provided in the treaty.

It has been clear, I believe, that such equal division is not an equitable apportionment in view of the areas reclaimable in each country, nor in the recognition of existing prior rights, and it is not in pursuance of the two documents from which quotations have been made, in the first of which, it is stated, 'in neither case to interfere with existing rights,' in the other, 'after due provision has been made for existing rights.' There is distinct interference with the existing Canadian right on the St. Mary river, and there is no provision for the existing Canadian right on the Milk river, while the evidence warrants the assertion that there has been a decided manipulation of existing American rights on the Milk river.

And it can further be said that the whole theory of the equal apportionment of the streams provided for in the treaty is wrong, because there is no recognition of the essentially different characteristics of the two rivers; the one, the St. Mary, is a perennial stream, furnishing a fair volume throughout the year, the other, the Milk river, is not—is frequently absolutely dry, especially at the point of intake of the Canadian canal.

This is best illustrated, I believe, not only by the statement that the mean annual flow of the St. Mary is 769,374 acre feet and of the Milk 231,820, but also by a comparison of the mean flows of each, in relation to the provisions of the provisions of the treaty.

In the St. Mary, the river, during the irrigation season, never falls below the amount provided as the first right of Canada, 500 cubic feet per second, as follows:—

	Cubic feet per second.
April.	679.5
May.	1,798.4
June.	3,864.4
July.	2,301.5
August.	1,039.9
September.	679.0
October.	591.

And, on the other hand, the Milk river is in excess of the American prior appropriation, of 500 cubic feet per second as provided in the treaty, in three months, and of 359 second feet, actually, in four months only of the irrigation season, as follows:—

SESSIONAL PAPER No. 19e

	Cubic Feet per second.
April.	649.7
May.	630.4
June.	864.7
July.	383.1
August.	126.4
September.	102.5
October.	200.6

In the last three months of deficient flow, Canada's share would be, on the treaty provisions, 31.6, 25.6 and 50.1 cubic feet per second, while from the St. Mary river the United States would secure, in these months, 539.9, 179.0 and 91.6 cubic feet per second, respectively.

The objection to the treaty that it provides for the division of waters to be made upon the diurnal rather than the periodic flows may be met with the answer that the treaty does not specifically provide for the division upon diurnal flows and that, in any event, the working arrangements would, naturally, be turned over to the international joint commission to be created.

The assumption may, however, fairly be made that the division is to be based upon diurnal flows. And if so, it does not require any extended experience in irrigation affairs to with certainty that difficulty would be experienced and conflict arise. From the composition of the commission and the arrangement provided for in the event of an even division of that body, it may be predicted, with greater certainty, that such division of the waters on diurnal flows, would result in a period of inaction and delay.

I am strongly of the opinion that the division on diurnal flow would result to the benefit of the United States, as would inaction and delay, and certainly to the loss of Canada. And with such certainty apparent, it would seem to be prudent to give the joint commission definite instructions on that important feature at this stage of the proceedings.

And I am more convinced that such difficulty would arise because of the absence of all reference to the creation, by the United States, of storage reservoirs on the St. Mary river particularly, because of the assurance that the United States can avail itself of the provisions of this treaty without the construction of such a reservoir, which would be in my judgment, to the loss of Canada in availing itself of the waters of the stream, for the more beneficial use, and because of the absence of any reference to the division of the waters on periodic flows, which has heretofore been a vital consideration in all communications on the subject, especially in the communications from Secretary Root, June 15, 1907.

It is essential, for the most successful operation of what is ostensibly the purpose of the treaty as it relates to these two streams—the most beneficial utilization thereof by the High Contracting Parties, that the flows during the winter months, that is of November, December, January, February and March, be stored, and stored in the United States.

It is impossible, from the operative point of view in connection with irrigation—to carry these waters in open canals at these altitudes, during the winter season. That would result in accidents and great expense, and be without any real benefit.

These waters can be stored naturally and advantageously in the United States. On both streams, the United States contemplate, or contemplated, the erection of reservoirs in the bed of the stream, where all the available winter flow would be conserved, without damage to structure and without loss.

In Canada, there are no reservoirs so fortunately located; all of them would have to be fed by diversion canals from the rivers, which canals could not be oper-

ated in the winter season. In Canada, storage means the conservation of the summer flood flows only.

The winter mean flows amount to, on the St. Mary, 100,643 acre feet, on the Milk river, 51,695 feet, together 152,338 acre feet out of a total of 500,597 acre feet to which either party,—the United States for instance, would be entitled during the whole year. That would leave 348,259 acre feet to be supplied out of both streams during the irrigation season, of which the mean flow of the Milk river would supply 64,215 as the share of the United States, leaving 284,044 acre feet to be secured from the St. Mary river in that period.

During that period, however, the St. Mary river affords normally 454,731 acre feet over and above the first right of Canada, under its prior appropriation, on the terms of the treaty of 500 cubic feet per second. And out of that surplus, the United States could secure, if it so desired, all of the water it was entitled to in the 'equal apportionment,' over and above what it secured from the Milk river.

That may be more plainly and effectively stated in another way. From the mean flow of the Milk river, the United States would be entitled to 115,910 acre feet in the twelve months, leaving 384,687 acre feet to be secured from the St. Mary river. That amount can be secured from that river by direct flow during the irrigation season, without requiring the construction of any reservoir at St. Mary lakes.

And, by such arrangement, Canada can be left to secure its share out of the summer and winter flow of the Milk river, and the summer and winter flow of the St. Mary river.

Ordinarily, there is no winter flow of the St. Mary river at the intake of the Canadian canal. Any flow recorded during that season appears at the boundary line or below—so that thereby Canada would be entitled to water it could not possibly secure, even if it could utilize.

It is a physical impossibility for Canada to conserve the winter flow of the St. Mary river, and consequently, there would be one-half of the winter flow of the Milk river, 25,847.5 acre feet, and all of the winter flow of the St. Mary river, 100,643 acre feet, together 126,490.5 feet—in excess of one-fourth of her total share in the 'equal apportionment'—which Canada could not possibly conserve, but which she may be compelled to accept as part of her share of this division, on the terms of the treaty.

Such arrangement would be referred to the commission. It is highly advantageous to the United States and greatly detrimental to Canada. There would probably be an 'even division' in the commission, the commissioners on each side would report to their own government, the High Contracting Parties would endeavour to agree upon an adjustment and, in the meantime, time and water would be lost.

To carry this method of operation out, the United States would require to enlarge the diversion canal from the St. Mary river to the Milk river above the capacity now proposed, 850 cubic feet per second, to at least 1,800 cubic feet, in order to secure the full benefit of the flood flows of the St. Mary river during the months of June and July. That, however, may be a less expensive operation than the construction of any reservoir at St. Mary lakes; or, it may continue to rely, solely, upon the present capacity of the diversion canal and construct a smaller reservoir at St. Mary lakes, with a capacity of about 150,000 acre feet, which, it will be recalled, has been engaging the attention of the engineers of the Reclamation Service.

It has to be remembered in this connection, what has probably not hitherto been made sufficiently and strikingly clear, that, in the Chain Lakes Reservoir, built directly on the bed of the Milk river, the United States would possess a basin of a capacity of 463,750 acre feet, which is only 36,853 acre feet less than its share of the 'equal apportionment' of the mean flows of the combined streams. That amount of 36,853 acre feet could be passed through it and delivered as a direct

SESSIONAL PAPER No. 19e

supply and leave Chain Lakes Reservoir capable of conserving the full share. And when it is recalled that the ultimate extent of the irrigable area on the Milk river is 200,000 acres, with a duty of water of 2 acre feet per acre or 400,000 acre feet in all, which the Chain Lakes Reservoir alone can abundantly conserve, this arrangement may be the economic solution of the problem as viewed by the United States.

In consideration of the compensation the United States would make, by the 'equal apportionment' provided in the treaty for the use of the channel of Milk river for the conveyance of any waters from St. Mary river, the strictly commercial aspect has been fully discussed in my report to Dr. King, April 22, 1906, pages 51 to 57, inclusive.

It is there pointed out that to divert such water, by any other route through the United States, would involve to that country an expenditure of from three to five million dollars, and it becomes, as expressed by the officials of the Reclamation Service, 'a critical question for the United States whether any economy of construction would justify giving up any considerable amount of water which might be used in future development of the arid lands.'

That, by itself, does not wholly cover the ground to be traversed by the provisions of the treaty; it omits consideration of the far more important feature 'of the more beneficial use to each country' of the waters of these streams, more fully expressed in the words 'an agreement whereby all available water shall be utilized for the conversion of the present desert wastes to the fertility of irrigated fields, to the advantage of both countries, is in the very highest degree desirable.'

On the narrowest lines, the consideration, in water values, that the United States should pay to Canada for a right of way through 215 miles of river channel in Canadian territory and for a now completed canal, as the Milk river is, and admitting, for the moment, that the United States has sovereign rights over the waters of streams which occur in its territory, is not difficult of ascertainment.

Canada's share of the waters of the St. Mary and Milk rivers under the provisions of the treaty are, as already stated,

From St. Mary river.	384,687 acre feet.
From Milk river.	115,910 "
Total.	500,597 "

The United States, however, would not 'give up' all of that as compensation for the use of the channel. The treaty admits the prior appropriation of Canada in the St. Mary river of 500 cubic feet per second during the irrigation season, and that amounts to 214,000 acre feet. While the treaty does not so admit, the United States must equally and consistently recognize the prior appropriation of the Canadian Canal on the Milk river, subsequent to the prior appropriation in the United States from that river, in the amount of 359 cubic feet per second. The Canadian canal capacity is 330 cubic feet per second. That amount represents in the four months of April, May, June and July, 80,520 acre feet, while the analysis of the normal flow of the Milk river, at page 27, shows that, recognizing the prior claim of 359 cubic feet per second, the Canadian canal could obtain 66,105 acre feet.

Together, these amounts are:—

From St. Mary river.	214,000 acre feet.
From Milk river.	66,105 "
Total.	280,105 "

which amount of water, even holding to sovereign rights, but, in its own interest admitting the necessity for irrigation in an arid region, the United States cannot deny to Canada, in strict conformity with the laws concerning the rights to the

9-10 EDWARD VII., A. 1910

use of water as recognized by the courts of the arid region both on this side of the international boundary and the other.'

There would then remain 220,492 acre feet as the maximum amount of water which the United States would 'give up' for this privilege. It would be less than that, in my judgment. I am very decidedly of opinion that the Canadian prior appropriation on St. Mary river could not be limited to 500 cubic feet per second, in view of the fact that the canal has to-day a greater capacity than that and that capacity has been developed strictly in compliance with the provisions of the authorization and with the narrowest conception of the exercise of due diligence. Nor, strictly speaking, would any limitation of the appropriation be confined solely to the irrigation season' under the provisions of the authorization, which grants 500 cubic feet per second of the low flow. I have pointed out that it would not be physically possible to run that water or any considerable part, during the winter season, but the right to do so is not and cannot be denied to the Canadian canal, under the authorization.

For the purposes of valuation, however, the quantity of 220,492 acre feet may be assumed. What is that amount of water worth in cash?

At page 56, report to Dr. King, April 22, 1908, an analysis has been made of values from figures given in the Reclamation Service reports.

On the Lower Milk river project, the value of irrigated land is given as \$40 per acre, on a duty of 2 acre feet per acre per annum.

It is an axiom, in irrigated districts, that the value of the water, or water right, is one-half of the value of the irrigated land, consequently the water right of 2 acre feet per acre in the Lower Milk River valley is \$20, or 1 acre foot is worth \$10.

The total amount of water 'given up' to Canada is thus \$2,204,920.

That represents a saving to the United States, over the cost of construction of any other route of, at least, one million dollars.

The value in acre feet per acre reclaimable has already been fully considered, in which it is shown that the United States would receive $2\frac{1}{2}$ acre feet per acre per annum for every acre shown by the reports of the Reclamation Service to be reclaimable in that country, while Canada will practically have 0.8 acre feet per acre per annum for the area reclaimable in its territory; or, if the duty of water established by the Reclamation Service is the least that can be provided for successful cultivation, Canada must be prepared to abandon 380,000 acres to desert conditions for all time.

There are two features to be regarded, it seems to me, in future consideration of the situation.

There is the obligation of the Canadian government to its licensee, the Alberta Railway and Irrigation Company, in the event that, by the provisions of this treaty, its operations should be curtailed. On the St. Mary river, its authorization permits of its diversion to the extent of 2,000 second feet of the flood flows. The normal stream flow is sufficient to permit of the development of an irrigation system to the amount of the authorization, and it is probable that, within the period of the grant, the company can, if not interfered with, so develop their system, judging from the progress made up to the present time.

In the event of a diminution of the normal flow of the St. Mary river to provide for the requirements of the United States under the provision of this treaty, it is physically possible for the Canadian government to make good the loss to its licensee, to some extent, by the diversion of waters from other streams, as the Belly river, but at considerable outlay. But, in any event, Canada must reckon on the loss of available territory in proportion to the loss of water sustained and should, therefore, be guided by far-seeing consideration of the amount of water to be surrendered.

On the other hand, the United States may, if it so elect, stand upon the claim of sovereign right and thereby, whatever may be the legal merits of such a claim,

SESSIONAL PAPER No. 19e

be open to the charge of inconsistency in dealing with its northern and southern neighbours, Canada and Mexico, and still further be charged with the reversion of the accepted doctrine of the arid region,—that the use of the waters of the streams of these districts be conserved to the ultimate design of conferring the greatest benefits to the greatest area. With the area susceptible of irrigation in the United States limited, by the investigations and surveys of its own Reclamation Service, to an area of 200,000 acres and a duty of water similarly defined as 2 acre feet per acre, it is impossible to understand why the United States, on any ground, legal or otherwise, should require the provision of more than 400,000 acre feet, leaving the balance to Canada, where all of the normal flow of the combined streams can be applied to beneficial use 'to the conversion of the present desert wastes to the fertility of irrigated fields.'

It is entirely conceivable that Canada would be disposed to sacrifice much for the maintenance of harmonious relations with the United States, but so far as the disposition of the waters of these streams, which may be used for the extension of irrigation, is concerned, it surely ought to be on lines that, fully protecting the United States in all that it can legitimately claim and beneficially use, shall still preserve the heritage of the Canadian people, and that will certainly not be fully secured by the provisions of the treaty.

Paragraph 2 of Article 6 of the treaty provides that 'the channel of the Milk river in Canada may be used at the convenience of the United States for the conveyance, while passing through Canadian territory, of waters diverted from the St. Mary river. The provisions of Article 2 of the treaty shall apply to any injury resulting to property in Canada from the conveyance of such waters through the Milk river.'

The conveyance of waters diverted from the St. Mary river, through the channel of the Milk river in Canada, at the convenience of the United States, will present physical conditions which are not provided for in Article 2 of the treaty.

That Article 2 provides that each of the High Contracting Parties reserves the exclusive jurisdiction and control over the use and diversion 'of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters' and it is agreed 'that any interference with or diversion from their natural channel of such waters on either side of the boundary resulting in any injury on the other side of the boundary shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs.'

That clearly means, in this particular case of irrigation streams, that, if the Canadian government permitted the diversion, for irrigation purposes, from the Milk river or any of its tributaries of any water naturally occurring in Canadian territory at a time when a prior appropriation in the Lower Milk River valley in the United States was not securing the full amount of his appropriation, the United States appropriator would be entitled to the same rights and the same legal remedies against the Canadian making the diversion as if that diversion were made in United States territory. That is to say, that the United States appropriator could ask the Canadian courts for injunctive relief and for damages for the actual injury by loss of crops or otherwise, against the Canadians making the diversion.

It may also be interpreted to mean that no diversion of any portion of the water conveyed by the United States from the St. Mary river, through the Milk river, would be permitted, as any such diversion, in any amount, would clearly be to the injury of the user of such water in United States territory. Although that prohibition is nowhere stated in the treaty, it is to be concluded that it is clearly understood between the High Contracting Parties, if for no other reason than the plain announcement of it in the communication from Elihu Root, Secretary of State, to

9-10 EDWARD VII., A. 1910

the Governor General, of date June 15, 1907 (see page 79 of my report to Dr. King, of April, 22, 1908) at paragraph 8, reading as follows:—

That Canada shall, in no event, divert from the Milk river any portion of the stored St. Mary river water turned into the Milk river system by the United States, due allowance being made for losses by evaporation or seepage, while passing through the channels of the Milk river system as fixed by the Commission provided for in paragraph 14.

And, as an 'interference with,' in the sense of an addition to or increase of the natural flows of the Milk river, a stream crossing the boundary, the agreement in Article 2 may, by greatly amplified interpretation, provide for legal redress of any injury, within the Canadian borders, resulting from the conveyance of such stored waters at the convenience of the United States.

It must be very plain, however, that the injury caused by such would be of a special character and entirely different from those considered and provided for in Article 2 as it now stands, which is peculiarly injury that would result from diversion, or from interference, as by the construction of remedial works. And as the nature of such injury can readily be forecast, it would certainly seem wise to make ample provision, at this time, for its possible avoidance, or for redress, repair and compensation.

The injury involved in the conveyance of such stored water, in addition to the natural flow of the Milk river, will be of two characters—possible injury to existing structures and certain erosion of the stream bed.

Of existing structures, there are now the dam at the intake of the Canadian canal and the railroad bridge crossing of the Alberta Railway and Irrigation Company. There are not at present any highway bridges, as the stream is fordable for the greater part of the year, except, ordinarily, during the period from May to July, inclusive, and only in that period at the height of floods. But, with the continuous flow during the summer season of the volume of water contemplated by the United States, the erection of highway bridges along the channel will become inevitable, otherwise that portion of Canada lying south of the Milk river may as well be ceded to the United States, and the boundary line changed to occupy the centre of the channel of Milk river.

These features of the burden imposed upon Canada by conveyance of water at the convenience of the United States were fully considered by me in my report to Dr. King, April 22, 1908, pages 30 to 33, and beyond the suggestion that the comments there made, and the full report of Mr. Fontaine, be read and carefully weighed there is no occasion to make further detail at this time.

It should be emphasized, however, that the continuous flow for a lengthened period of even a moderate volume of water, to say nothing of the quantity contemplated by the United States (850 cubic feet per second is the capacity of the diversion canal now under construction), which is in excess of the mean flow of the Milk river in any month of the year (see page 63, report of April 22, 1908, and page 55 this report), will much more surely and speedily create erosion, even on the lower gradients of the stream, than great volumes for short periods.

And the practical result of this conveyance of water through the Milk river by the United States will be to convert the channel into an irrigation canal. If an irrigation company were to construct a canal of similar dimensions for 200 miles in Canadian territory, it would be compelled under the Irrigation Act to erect and maintain highway bridges over road allowances for the use and convenience of the settlers. If this burden is not imposed upon the United States, it will have to be borne by the Canadian government, unless, as I have pointed out, Canada is prepared to leave the portion of its territory south of the Milk river unsettled, or, if settled, with its trade tributary to the United States.

SESSIONAL PAPER No. 19c

I believe it is fair to say that the United States realizes the extent and character of the burden involved in the erection and maintenance of highway bridges, and the injury likely to follow from erosion and seeks to avoid it by the indefinite reference of such to the provisions of Article 2. That is clearly revealed, it seems to me, in paragraph 13 of the communication from Secretary Root, June 15, 1907, which reads as follows:—

That the United States shall not be liable for damages of any kind resulting from high water stages or floods of Milk river, whether occurring at times when water from St. Mary river is being carried in Milk river or not.

With the certainty of such damage occurring, and the necessity for special provisions so manifest, it would clearly be prudent for Canada now to make specific arrangement for it, even granting, what is not plain to the lay mind, that article 2 fully covers it, in terms generally as follows:—

The United States shall be liable for the cost and maintenance of all structures rendered necessary in the bed of Milk river within Canadian territory, used by the United States in the conveyance of water, to maintain and protect the vested rights of the Canadian government or of settlers in the Milk river valley and for any and all damage to existing structures on Milk river in Canadian territory whether these are owned or controlled by the Canadian government or by private parties. And the United States shall further be liable for the cost and maintenance of highway bridges over the Milk river, within Canadian territory, not exceeding 30 in number, the selection of the sites of said bridges to be made by the International Joint Commission in consultation with the duly appointed provincial officers.

The provision of an International Joint Commission, consisting of an equal number of members representing each of the High Contracting Parties and without an oversman, whose judgment would be called in case of an even division in the body, is an unusual commission in such important matters. On all of the other controversies sought to be adjusted by the treaty, it may result satisfactorily, even with the delays that would likely occur in the presentation of reports by each set of commissioners to their respective governments. In the case of dispute over the apportionment, for irrigation, of the waters of the St. Mary and Milk rivers, where prompt action might be required in order to conserve these waters to the fullest benefit, such delay might, it seems to me, result in serious loss to either and perhaps both countries.

I have already pointed out the lack of instructions to guide the International Joint Commission, on the feature alone of the diurnal or periodic apportionment of these waters, the importance of which may, probably, be readily apparent only to those who have extended experience in the regulation and distribution of waters for irrigation purposes. As the treaty stands, there is ample room for wide divergence of opinion on that feature, and recognizing that probability, it would certainly seem advisable to make definite provision, within the treaty itself, of the method which shall be adopted and followed. I am convinced that it will be greatly to Canada's loss, if any other than the method of periodic apportionment is followed, but, in any event, it should now be declared, for the guidance of the Commission, just what method is agreed upon.

The necessity for the appointment of an oversman seems equally plain, although if the periodic method of apportionment is established there would be less apparent need for his service, at least immediately.

There should also be, in my judgment, a provision for damages in the event of failure of any reservoir dam or other works, in something of the following terms:—

Either country shall be liable to the other, or any citizen thereof, for any and all injury or damage created by failure of any artificial structures built by

9-10 EDWARD VII., A. 1910

them within their own territory, but in connection with the development of this enterprise of combining the waters of the St. Mary and Milk rivers, or for any, and all damage caused by either country in diverting water from either stream into the other.

In the event failure of the embankment of the proposed St. Mary reservoir, great injury might be done to settlers along the river bottoms in Canada, for which recovery could not be made unless some such method is provided for.

And it certainly seems to me that the provisions of the treaty, as it is now drafted, should be accompanied—

With the further understanding that the failure of either country to fully utilize the rights hereby agreed to shall not be regarded as adding to or diminishing the rights of the other country, but either country shall be entitled to avail itself of any water not utilized by the other country under this agreement.

It is very certain that occasions will arise when either country will not be able to avail itself of the provisions of the treaty in respect to the amount of water utilized, and it is only just that, on such occasions, the other country should be permitted to avail itself of the unutilized quantity of water, if it so desires, and that without affecting its rights under the treaty.

It may be suggested that such additional provisions as herein outlined are more properly the province of the International Joint Commission and the regulations they may establish, but it would clearly avoid the possibility of disagreement if the principles on which the treaty is based could be defined to the commission without unduly burdening the treaty itself.

And it may be pointed out that the provision suggested was incorporated in the communication of Secretary Root to the Governor General, June 15, 1907, as Article 3. (See report to Dr. King, April 22, 1908, page 77).

Thus far this review and report has been confined to criticism of the treaty as it is now drawn, and its effect upon Canadian interests.

With a desire to avoid the appearance of being entirely iconoclastic, and at the same time the appearance of presuming overmuch on the instructions given to me, I would venture to suggest an alternative proposition which would safeguard the interests of the United States, and, at the same time, give an opportunity to Canada to extend the development of the irrigable territory in Southern Alberta.

In more than one place in this report (as at pages 35 and 41), it has been pointed out that the United States, by the extensive and elaborate surveys conducted by its reclamation service, had determined the limit of the irrigable area in the Lower Milk River valley in Montana at approximately 200,000 acres. It has also declared, by the same service, that the necessary duty of water in that region is two acre feet per acre per annum, while the scientific observation has been that the actual duty has been less than that—has been 18 inches or $1\frac{1}{2}$ acre feet per acre per annum.

On the higher duty, there would be a total requirement of 400,000 acre feet per annum. On the principle that the underlying object of this treaty, so far as it affects the waters of these international streams, the St. Mary and Milk rivers, is, in the words of the treaty itself, 'to afford a more beneficial use to each,' the United States cannot reasonably require more.

On the other hand, with 630,000 acres of land available for reclamation by irrigation, Canada can make a beneficial use of all the water obtainable over and above 400,000 acre feet per annum.

It would, therefore, appear that the whole purpose and object of the treaty can be subserved by the undertaking of Canada to deliver, annually, to the United States, at the most easterly crossing of the international boundary of the Milk river, out of the waters of the two streams, 400,000 acre feet of water. The United States can make its own provisions for the conveyance and storage of such amount of water, it

SESSIONAL PAPER No. 19e

may build reservoirs on the St. Mary and Milk rivers, either or both, and make such diversion channels as would seem to the reclamation service best and most economically fitted for that purpose, on the understanding, however, that the United States would take the winter flow of both streams. And, without presuming to give advice to the engineers of the service, I am well convinced, from my personal knowledge of the situation, that out of the consideration of such a proposal, they can evolve an entirely adequate and much less expensive method of reclaiming these lands in the Lower Milk River valley.

But, in such arrangement, Canada should still retain the provisions for maintenance of existing structures and highway bridges on the Milk River in her own territory, and also that either country may avail itself of any waters not utilized by the other country.

Before concluding this report, I would draw attention to the remarks made by me, in report to Dr. King, April 22, 1908, pages 68 to 70, on the alternative route for a diversion canal from St. Mary river to the headwaters of the Milk river.

I am satisfied that the engineers of the United States are of opinion that this route is much more economical than the all-American route surveyed, and that it possesses more decided advantages than even the brief reference quoted from the fourth annual report would indicate.

And, for the ultimate development of the possible irrigation works in southern Alberta, it would be highly advantageous for Canada, by its government or licensees under it, to have the right of entry for construction in United States territory. As I pointed out in the previous report, that object can be accomplished by a canal route wholly within Canadian territory, but at much greater expense, and by the construction of a high impounding dam on the St. Mary river, which would back water up into the United States territory.

There would seem to be no good reason to expect objection from the United States authorities to grant right of way for such a canal, in the event of its proposal, under ordinary conditions, but as the object of the treaty is to dispose of all matters affecting these rivers at this time, it would seem prudent to make arrangement for this feature now.

Finally, in summary, I believe I have referred to all the possible features that should be considered in connection with this treaty, and would hope that I have presented them in such a manner that Canada, with a great desire to maintain harmonious relations with the United States and co-operate with that country in the greatest possible development of the waters of the St. Mary and Milk rivers for the irrigation of the arid sections in both countries, may fully protect the present and future interests of her own people in Southern Alberta, where so much development is possible—so much more than is readily appreciable.

Respectfully submitted by

GEORGE G. ANDERSON,

*Consulting Engineer, Mem. Inst. C.E., Mem. Canadian Soc. C.E.,
Mem. American Soc. C.E.*

TABLE A.—Discharge of St. Mary River, Near Cardston, Alberta, 1902-1908.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1902.....									35,940	29,330	20,350	67,144	
1903.....	<i>a</i> 52,572	<i>a</i> 50,70	<i>a</i> 78,028	63,550	105,759	309,421	179,790	86,329	65,990	56,384	31,835	23,931	1,107,294
1904.....	<i>a</i> 13,773	<i>b</i> 11,504	<i>b</i> 12,298	55,636	124,328	166,255	114,367	57,215	24,992	13,097	<i>b</i> 7,260	9,654	610,409
1905.....	<i>a</i> 5,531	<i>a</i> 4,165	<i>b</i> 10,510	17,550	74,710	146,500	101,000	52,089	22,080	47,470	17,730	<i>a</i> 14,769	514,100
1906.....	6,450	5,280	7,690	28,600	92,200	136,000	113,000	58,200	57,400	46,500	65,500	22,100	619,000
1907.....	<i>a</i> 9,220	<i>a</i> 11,100	<i>b</i> 9,220	29,100	119,000	253,000	492,000	81,800	72,000	34,900	44,500	9,650	835,490
1908.....	<i>b</i> 3,070	5,750	13,800	50,200	453,000	<i>a</i> 380,000	156,000	51,200	26,800	29,100	27,300	7,600	903,910
Mean in acre ft.	15,053	14,751	21,324	40,773	111,500	231,863	142,693	64,476	40,743	36,383	26,354	22,561	769,374
Mean in sec. ft.	242.8	263.4	353.6	679.5	1,798.4	3,864.4	2,301.5	1,039.9	679.0	591.7	439.2	363.9	.....

a—Approximated.*b*—Estimated from gauge heights.

SESSIONAL PAPER No. 19e

TABLE B.—Discharge of Milk River, at Havre, Montana, 1898–1908.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1898.					85,837	80,568	10,339	6,948	3,154	5,411 <i>e</i>	5,950	6,948	
1899.	<i>a</i> 25,440 <i>a</i>	33,322 <i>a</i>	30,744	81,223	61,857 <i>a</i>	55,934 <i>a</i>	14,818 <i>a</i>	12,052	7,795	57,798 <i>a</i>	11,306 <i>a</i>	9,223	402,512
1900.	<i>a</i> 6,149 <i>a</i>	5,551 <i>a</i>	9,223 <i>b</i>	23,445	26,747	9,164	2,644	2,460	4,522	11,437 <i>c</i>	6,783 <i>a</i>	3,074	111,202
1901.	<i>a</i> 3,074 <i>a</i>	5,554 <i>a</i>	36,893	12,198	39,814	32,906	11,314	1,722	3,332	5,042	4,760 <i>a</i>	6,149	162,788
1902.		11,068 <i>a</i>	15,310	11,663	66,714	88,007	125,742	23,181	17,673	18,999 <i>a</i>	17,851 <i>a</i>	18,466	426,226
1903.	<i>a</i> 12,298 <i>a</i>	11,107 <i>a</i>	14,757	59,266	66,344	58,015	27,362	23,242	9,759	8,485 <i>a</i>	6,843 <i>a</i>	9,038	306,516
1904.	<i>a</i> 5,534 <i>a</i>	4,314 <i>a</i>	4,612	103,299	22,935	16,542	2,705	307	178	1,168	2,083 <i>a</i>	1,537	165,214
1905.	<i>a</i> 307 <i>a</i>	278 <i>a</i>	2,460	3,511	3,812	2,083	3,320	1,290					
1906.			1,290	5,630	7,329	55,060	6,210	320	167	92 <i>f</i>	30		
1907.		44,460	52,000	72,600	28,200	48,900	24,400	3,790	7,560	5,030	4,310	3,690	294,280
1908.			13,000	17,600	20,300	123,000	32,400	10,900	7,380	10,900	11,100		246,580
Mean in acre ft.	7,208	12,898	18,929	38,983	39,083	51,884	23,750	7,837	6,152	12,436	7,102	6,458	231,820
Mean in sec. ft.	116.3	230.3	290.8	649.7	630.4	854.7	383.1	126.1	102.5	200.6	118.4	104.2	

a—Approximated.*b*—Estimated from gauge heights April 10–30, 1900.*c*—Estimated from gauge heights November 1–15, 1900.*d*—Estimated from gauge heights May 15–31, 1898.*e*—Estimated from gauge heights November 1–19, 1898.*f*—No flow after November 16.*g*—Estimated.

9-10 EDWARD VII., A. 1910

TABLE C.—Table showing mean flow of Milk River and amounts available for Canada, on basis of prior appropriations in United States at 359 and 500 cubic feet per second.

—	Mean flow.	United States prior rights.	Available for Canada.		United States prior rights.	Available for Canada.	
	sec. ft.	sec. ft.	sec. ft.	acre. ft.	sec. ft.	sec. ft.	acre. ft.
January.....	116·3	.....	.....	.....	.....	.....	.....
February.....	230·3	.....	.....	.....	.....	.....	.....
March.....	290·8	.....	.....	.....	.....	.....	.....
April.....	649·7	359·0	290·7	17,442·0	500·0	149·7	8,982·0
May.....	630·4	359·0	271·4	16,826·8	500·0	130·4	8,084·8
June.....	864·7	359·0	505·7	30,342·0	500·0	364·7	21,882·0
July.....	383·1	359·0	24·1	1,494·2	500·0	.....	.....
August.....	126·4	.....	.....	.....	.....	.....	.....
September.....	102·5	.....	.....	.....	.....	.....	.....
October.....	200·6	.....	.....	.....	.....	.....	.....
November.....	118·4	.....	.....	.....	.....	.....	.....
December.....	104·2	.....	.....	.....	.....	.....	.....
			Total.....	66,105·0		Total.....	38,948·8

APPENDIX A.

Condensed Statement taken from the Report on the St. Mary Canal Project.

STORAGE AND DIVERSION OF THE WATERS OF ST. MARY LAKES, MONTANA.

The St. Mary project is designed to store flood waters in the St. Mary lakes in Northern Montana and conduct these easterly by a canal cut through the ridges at the head of Milk river. These lakes receive the drainage from the high peaks of the Rocky mountains, but, instead of continuing easterly across the plains as do the rivers further south, the water overflows northerly by St. Mary river to the Saskatchewan river and are lost in Hudson bay. The easterly course, which appears to be the original or natural direction for the waters to pursue, has been blocked by the glacial debris left near the foot of the mountains. In this low, irregular country are a number of small streams, most of which are tributary to Milk river. The proposed canal will restore what may be called the pre-glacial drainage and allow the waters from the Rocky mountains to continue eastward down the slope of the country.

Milk river, heading in the low, rolling country, east of the foot of the mountains, has a general northeasterly direction, the two principal branches, north fork and south fork, uniting after crossing the Canadian line. The stream thus formed flows easterly for 150 miles or more, where it bends to the southward and again returns to Montana, finally emptying into the Missouri river. The broad Milk river valley in Montana consists of a generally rolling country, adapted to irrigation.

SESSIONAL PAPER No. 19e

The water supply from the river is, however, deficient, owing to the lack of high mountain area at the headwaters. The diversion canal, as planned, will restore the mountain catchment area to this stream.

It is proposed to build a low storage dam at a point about three-fourths of a mile below the present outlet of lower St. Mary lake. This dam will have a maximum elevation of 50 feet above the bottom of the river and will form a reservoir of a capacity of 250,000 acre feet. This reservoir will serve to hold the flood waters and the supply received from the melting snow in the mountains. The head of the diversion canal will be on the right hand or eastern side of the dam. It will continue down along the right bank of the river for about seven miles, then turn easterly through a low gap.

The water of the St. Mary river is not used in the United States, but in Canadian territory, seven miles north of the international line is a canal completed in 1900. Between the site of the proposed dam at the foot of St. Mary lake and the head of the Canadian canal a considerable number of large streams discharge into St. Mary river, furnishing an ample supply for the land irrigated in Canada. It is not believed that any international complications can arise concerning water rights, since the water which it is proposed to store and divert occurs wholly within Montana and it would be impossible for the Canadians to store and utilize this flood water, even if needed in their canal.

The length of the proposed St. Mary canal, from its head on St. Mary river to the north fork of Milk river, is 27.4 miles, and the cost of construction, including dam and headgates and the drop at the north fork, will be \$687,000.

Estimated Cost of St. Mary Dam and Canal to North Fork of Milk River.

Dam.. . . .	\$22,000
Tunnel at head.. . . .	12,000
Headgates.. . . .	10,000
Head to Spider Lake excavation.. . . .	245,100
Spider Lake to drop, North Fork excavation.. . . .	288,400
Drop, North Fork.. . . .	16,040
Two sets of waste gates on line.. . . .	4,000
	\$597,540
Engineering and contingencies.. . . .	89,460
Total.. . . .	\$687,000

The canal has been planned to carry 1,200 cubic feet per second, and the amount of acreage to be reclaimed is estimated at 120,000 acres of public land, which would have a probable value of \$35 per acre, or \$4,200,000, and would sustain a population of 20,000. By storage in the Lower Milk River valley the area of reclaimed land, including the use of Milk River, can be increased to 300,000 acres.

The extension of the canal from North Fork to South Fork and turning it into this latter stream will have certain advantages over the plan for stopping the canal at the North Fork. The total cost of the canal, from the head to the South Fork of Milk river, will be \$1,173,000, and its length will be 43.3 miles.

Estimated Cost of St. Mary Dam and Canal to South Fork of Milk River.

Dam.	22,000
Tunnel	12,000
Heagates.	10,000
Head of Spider Lake.	245,100
Spider Lake to North Fork of Milk River.	288,400
Two sets of waste gates.	4,000
Siphon, North Fork.	67,000
North Fork to South Fork Milk River.	360,800
	\$1,009,300
Contingencies.	109,000
Engineering.	54,700
Total.	\$1,173,000

If the water is turned into either the North or South Fork of Milk River, it first finds its way into Canada before it can be used in the lower basin. The valley proper of Milk River in Canada is comparatively narrow, and has little irrigable land, so that any proposition on a large scale must contemplate using the high bench of lands above.

Milk river in Canada, from the junction of the north and south forks down stream, has a very slight fall—not more than two feet to the mile—and a canal of 100 miles or more in length would be necessary before the water could be brought to the upper benches. It is not, therefore, considered feasible to divert the waters from Milk river in Canada. In case this should ever be attempted it is entirely practicable to keep the water in American territory by an extension of the canal from the south fork to the Marias river. The canal from the south fork could be carried around the ridge between the basin of this stream and that of the Marias drainage, and, after running for a distance of about 46 miles from south fork, it could be turned into Cutbank creek. The cost of construction from the head to this point will approximate \$1,623,000 and the distance will be 90 miles. The canal has not yet been located from the south fork to Cutbank creek, and the latter figure of cost is a rough estimate. The water could then be allowed to continue down the natural channel of this stream and the Marias for 100 miles or more, when it could be diverted from the latter near the mouth of Wilow creek, and in the course of about 75 miles turned into Big Sandy creek, a tributary of lower Milk river. This plan keeps the canal in United States territory for its entire course until it reaches lower Milk river, where the water can be most advantageously used. The total cost from the head on St. Mary river to Big Sandy creek, by the Marias diversion, is placed at \$2,600,000. This location has not been surveyed, however, and the above estimate, together with those that follow, are simply roughly approximate.

Plans have also been considered for a secondary system of storage reservoirs in the lower Milk river basin.

If this plan is adopted of turning the water of St. Mary lake into the south fork of Milk river, allowing it to continue down through Canada, and then utilizing it through the secondary storage system in lower Milk river valley, 300,000 acres can be reclaimed at an estimated cost of from \$7 to \$9 per acre.

In the complete development of the system, including the utilization of St. Mary and Marias waters and the construction of the secondary storage system, about 500,000 acres can be reclaimed at a cost not to exceed \$10 per acre.

SESSIONAL PAPER No. 19e

OTTAWA, Ont., April 22, 1908

W. F. KING, Esq., LL.D.,

Chief Astronomer, Department of the Interior,
Ottawa.

DEAR SIR,—I have the honour to submit herewith my report on the various features involved in a proposed agreement between Canada and the United States for the equitable division and use of waters of the St. Mary and Milk rivers in Alberta, Saskatchewan and Montana.

Respectfully submitted,

GEORGE G. ANDERSON,

Consulting Engineer.

REPORT ON THE PROPOSED AGREEMENT BETWEEN CANADA AND
THE UNITED STATES FOR THE EQUITABLE DIVISION AND USE
OF WATERS OF THE ST. MARY AND MILK RIVERS IN ALBERTA,
SASKATCHEWAN AND MONTANA.

In the matter of the equitable division and use of the waters of the St. Mary and Milk rivers between the United States and Canada, it would appear to be essential, at the outset, to form an adequate conception of the possibilities of the territory in Canada that will be affected by any arrangements made between the countries.

Solely from perusal of the various reports of the United States reclamation service, it would be concluded that the scope of irrigation possibilities in Canada from the St. Mary river are of the most limited character, that the plans which have been formed and the present constructed canals are merely of a trifling character, and it would almost appear from the numerous fretful remarks in various reports, to have been designed simply for the purpose of annoying the United States and interfering with the gigantic plans formed in that territory for the reclamation of vast areas upon the most philanthropic and altruistic ideas.

On the Milk river, Canada would appear to have engaged in an undertaking which the superior minds of the reclamation service officials early declared to be impossible of accomplishment by reason of physical difficulties, and later, to be regarded as the outward manifestation of an unfriendly act, contemplating the disregard of existing prior appropriations in the Lower Milk River valley, forgetful of the fact that, up to that time, such an action was precisely what the United States has proposed to do on the St. Mary river to Canadian appropriators.

It is not surprising, of course, that the United States should fail to form the least conception of the plans of Canada in regard to the reclamation of the vast territory in Alberta, though it may be difficult to understand why its officials should persistently ignore, even up to the present time, the possibility of storage development within the Canadian border.

But it is doubtful, on the other hand, if the possibilities within Canadian territory are fully or sufficiently realized by Canada itself and, before entering upon any negotiations looking to a final determination and adjustment of the available water supply of the two rivers that form the source of its future development, it is necessary to outline briefly but clearly what it is possible to accomplish.

The Alberta Railway and Irrigation Company operates from the St. Mary River under authorization of date May 3, 1899, granting it 500 second feet of the low flow and 2,000 second feet of the high or flood flow of the stream, with ten years in which to complete its works, which was subsequently extended to fifteen years, from the 23rd of October, 1902.

From the Milk River the company operates under authorization of date October 23, 1902, granting it 500 second feet of the low flow and 1,500 second feet of the high or flood flow, with fifteen years in which to complete its works.

And further power is granted the company in connection with any streams from which water can be obtained to develop and reclaim the arid regions within the scope of its enterprise.

Surveys were projected which developed the fact that tributary to the canal system projected from the St. Mary River there were 450,000 acres capable of irrigation and under the system from Milk River, 180,000 acres.

With full realization of the fact that the direct flow of the streams, either separately or collectively, was not sufficient for the irrigation of that extensive area, explorations were conducted for the purpose of ascertaining and locating available reservoir sites, with the result that an extensive system was found, capable of serving the area irrigable, and these reservoirs and capacities, nearly all of them the results of careful contour surveys, are hereby given.

Connected with the St. Mary System.

	Acre ft.	Acre ft.
Mary lake reservoir..	21,658	
Taylorville reservoir..	42,836	
Lumpy Butte reservoir..	12,473	
Chin Coulee reservoir..	50,000	
		126,967

Connected with the Milk River System.

Shanks lake reservoir..	109,347	
Milk river reservoir..	29,000	
Brunton reservoir..	67,000	
Raymond..	7,575	
Verdigris reservoir..	150,000	
Crow Indian..	100,000	
		462,922

Total capacity..	589,889
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While filled from the Milk river, or from the St. Mary river, the waters stored in the Milk river reservoir and the Raymond reservoir would be utilized in the St. Mary canal system, and the waters stored in the Shanks lake reservoir could be used either in the Milk river canal system, or, by diversion, through the Milk river and Raymond reservoirs in the St. Mary canal system.

In addition to these reservoirs, there are other sites throughout the district under consideration, as Enokimi lake and Horsefly lake, that could be incorporated in the system, but whose capacities and general features have not been fully examined.

The whole project in combination forms an enterprise of unusual possibilities, of great scope and of certain returns, in a financial sense, as well as in the broader sense of opening up, developing and reclaiming, for the benefit of the coming generation, of an extensive area of what is at present an unsettled desert. It is as large and as feasible an irrigation enterprise as any in the arid regions of America.

And with considerable familiarity with such enterprises in the arid west, I can assert that the work of construction, of diversion of water and its application to beneficial use, and the settlement and reclamation of the lands tributary to the canal system of the Alberta Railway and Irrigation Company have been prosecuted with greater diligence and at a greater rate of progress in the increase of population and all that involves than under any project of similar magnitude in an irrigation country. The company has, thereby, kept absolutely good faith with the Government,

SESSIONAL PAPER No. 19e

and by that very circumstance the possibility of the remaining section still unsettled and unreclaimed is as well known, if not better known, in the circles from which settlers are attracted to these new territories than any other similar section.

From all these considerations, it must be realized and fully borne in mind that Canada has as great and extensive a territory available for reclamation, dependent on the waters of the St. Mary and Milk rivers, as is contained within the territory of the United States.

And, by prior appropriation, if from no other circumstance, Canada has as clear a legal claim upon the waters of these streams as has the United States, whose only title to the water of St. Mary River, at the present time, in my judgment and, apparently in the opinion of the Reclamation Service officials, if the statements in their reports may be valued, lies solely in some shadowy claim that the waters which occur within United States territory are the heritage of the American people.

At the very outset, also, it has to be fully borne in mind by the representatives of Canada, that the proposed diversion of water from the St. Mary River by the United States is not, by itself, an enterprise that would be favourably considered in a commercial sense. That can be demonstrated by a careful and painstaking perusal of the various reports made upon it by the Reclamation Service from 1899, when it was first considered, to the present time.

The earliest proposition was to construct an all American route, skirting the head waters of the North and South forks of Milk River—across Rocky Coulee and along the southern slopes of the Sweet Grass hills, at a roughly estimated cost of nearly five million dollars.

It was proposed, then, to use the channel of Milk River in Canada, upon the assumption and assertion that Canada could not divert water from Milk River within its own territory and upon the actual demonstration that Canada could so divert water, the United States fell back upon a proposal to conduct the waters via the Marias route.

Abandoning all hope of forcing a way through the Milk River, the present status is, upon first blush, to secure an entry along that channel *upon terms*.

In the event that such terms as Canada requires may not be acceptable, it is proper to take some cognizance of the alternative routes and plans contemplated by the United States, in order that Canada may be well advised lest, in some extreme event, the United States should accomplish the diversion of water from the St. Mary River adverse to the interests of Canadian settlers and Canadian territory.

From the earliest consideration of the diversion of water from the St. Mary River by the United States officials, an alternative plan of utilizing the waters so diverted for the irrigation of lands in the eastern portion of the Blackfeet Indian Reservation and immediately adjacent thereto has always been suggested.

In the First Annual Report of the Reclamation Service, June-December, 1902, it is stated, page 206, that three courses were open for consideration: 'Second, utilize the water on lands as far west as possible, thus irrigating the eastern section of the Blackfeet Indian Reservation and lands immediately on the east.'

This reference is reported in somewhat similar form in the second, third, fourth and fifth reports and in the sixth and last report for 1906-1907, it is stated (page 115) that 'if such an agreement (with Canada for the equitable division and use of waters of both streams in either country) can not be reached, however, the second plan for the development of the St. Mary water will be carried out; that is, to utilize it on lands in the eastern part of the Blackfeet Indian Reservation and on lands immediately adjacent to the east.'

'The total area in this vicinity available for irrigation purposes is 100,000 acres.'

It may be well to give some consideration to the possibility of the plan being carried out, and the effect of such development upon Canada's interest in the waters of the St. Mary River.

In page 180 of the Fourth Annual Report of the Reclamation Service for 1904-5 there is a map showing the relative position of this section of the Blackfeet Indian Reservation, and at page 179 is the following brief description of the extension of the canal from St. Mary river necessary to accomplish this development.

'St. Mary canal would have to be extended first across the north fork of Milk river, then to and across the south fork to the top of the ridge, or the divide between south fork of the Milk river and the Rocky Coulee drainage, a tributary of the Marias. The total length of this canal would be 60 miles. The water would be turned into Little Rocky Coulee, down which natural channel it would flow for a few miles and then be diverted to the agricultural lands.'

Beyond the South Fork of Milk river there would then be about 17 miles of main canal to build—the South Fork being 43.8 miles from St. Mary river.

In order to form some conception of the cost of this canal system, reliance must be had upon the figures and estimates of the Reclamation Service as published in its various reports.

In the first place it is found that there has been already an expenditure of \$184,080.28 on this project, of which \$36,423.43 has been actually for excavating, leaving \$147,656.85 for engineering administration and contingencies.

In the various reports the estimated cost of the dams at St. Mary lakes is stated at \$250,000.00, which appears low enough when it is borne in mind that the total content of the dam will be 585,864 cubic yards (see page 208, First Annual Report) and that the surroundings for bed rock show in some places 188 feet depth.

On the first 14 miles, the lowest and only bid (rejected) was for \$767,505.00 and as the work is being done by force account, it may reasonably be concluded that the actual cost of construction will be at least that amount.

The remaining 13.4 miles to the North Fork of Milk river may be placed at the same amount though the work on this section is heavier than on the first 14 miles.

For the section between the North and South forks of Milk river 16.4 miles long, reliance must be had on the original estimate of the reclamation service (page 211, First Annual Report).

There is, first, a siphon crossing North Fork placed at \$67,000 for a structure of 2,636 feet long, with an invert of 161 feet, of three wooden stave pipes each 7 feet in diameter. The figure certainly appears very low.

The canal construction of 16.4 miles is estimated at \$360,000 in comparison with \$767,505 for 14 miles, while at page 211, First Annual Report, it is stated that '7 miles beyond the North Fork, the canal would pass through what is known as McLeod Gap, where occurs the greatest depth of excavation of the entire line, amounting to 176 feet.'

The first 20 miles beyond Fork (South) are estimated (page 212, First Annual Report) at \$12,000 per mile and there would be 17 miles at a total cost of \$204,000. Summarizing there would be:—

Engineering administration and construction to date..	\$147,656 85
Dam at St. Mary lakes..	250,000 00
First 14 miles..	767,505 00
Second 13.4 miles to North Fork, Milk river..	767,505 00
North Fork to South Fork, Milk river—	
Siphon..	\$ 67,000 00
Excavation..	360,800 00
	427,800 00
17 miles beyond South Fork at \$12,000 per mile ..	204,000 00
Engineering and contingencies, 15 per cent on all save	
first item..	362,521 50
	\$2,926,988 35

SESSIONAL PAPER No. 19e

to which must be added the cost of construction of distributing canals covering the irrigable area after the water has been diverted from Little Rocky Coulee, and that with the inevitable increase above several of the items enumerated above, for the very apparent reason suggested, would swell the cost to between $3\frac{1}{2}$ and 4 millions of dollars for the reclamation of 100,000 acres or between \$25 to \$40 per acre, which unit price may well cause the Reclamation Service officials to hesitate—it is certainly beyond the limit they have elsewhere applied to projects under their consideration.

If the reclamation of the Blackfoot Indian reservation and adjoining lands was to be considered as an independent project there would possibly be some amendments in the dimensions and estimates submitted.

It is estimated that there was 100,000 acres available for irrigation and that area would require on the duty of 100 acres to the cubic foot per second a canal capacity of at least 1,000 cubic feet per second, while the section of the canal upon which bids were submitted has a capacity of 850 cubic feet per second. On the other hand, the section of the canal upon which estimates of cost were given only, from the earlier reports of the Reclamation Service was designed to have a capacity of 1,350 cubic feet per second, and at first glance, it might appear that these estimates were subject to some reduction, proportionate to the reduction of the capacity from 1,350 to 1,000 or 850 cubic feet per second. As it has been shown, however, that the actual bids for the construction of the 850 second foot canal were in excess of the estimated cost of construction of the 1,350 second foot canal, it would seem that these estimates should really be increased and not decreased.

If the project is confined to the reclamation of the Blackfoot Indian reservation and adjacent lands there would not appear to be any necessity for the construction of a reservoir, or at least of a reservoir with capacities of either 250,000 or 150,000 acre feet at St. Mary lakes, and the estimated cost of construction of that feature may be eliminated from or materially decreased in the total estimate. That, of course may be done without seriously affecting the result as it is only \$250,000 out of $3\frac{1}{2}$ to 4 millions of dollars.

With 100,000 acres only to irrigate the United States officials might conclude to rely solely upon the direct flow of the St. Mary river, and Swift Current creek which would be diverted into the main stream above the point of intake of the diversion canal. To that, if necessary, could be added the waters of Kennedy creek, that is to say, it is a physical possibility to divert these also into the main stream above the point of intake of the diversion canal.

The irrigation season ordinarily embraces the months from April to October, inclusive, though, of course, full supply is not required throughout all of that period. From the records of the stream flow from 1902 to 1906, inclusive, at the international line, the following are the mean flows during these months, in second feet.

April.	688.9
May.	1,600.8
June.	3,159.0
July.	2,029.0
August.	1,023.5
September	621.3
October.	621.9

From that table, it will be seen that the United States could depend on the full supply of 1,000 cubic feet per second for the direct flow of the river in all the months of the irrigation season, except April, September and October.

During these months, a full supply would not be required, indeed it is doubtful if any water at all would be used or could be diverted ordinarily in April. The Alberta Railway and Irrigation Company rarely run water in their canal prior to May

9-10 EDWARD VII., A. 1910

1st. If full supply for September and October were required, the construction of a reservoir of smaller capacity than 250,000 or 150,000 acre feet would fully answer the requirements at a reduced cost.

Dependence upon the direct supply leads to the consideration of the attitude of the United States to the rights of prior appropriators of water from the stream in Canada and that should be discussed in connection with the general features of this alternative plan in its bearing on the water supply. In the event, the remote event, it may reasonably be described, of the United States proceeding with the enterprise of the reclamation of the Blackfeet Indian Reservation as an alternative plan in the failure to arrange with Canada for the equitable division and use of the waters, in what respect would it adversely affect Canadian interests?

In the Second Annual Report (page 34), an accidental reference is made to the duty of water at the St. Mary dam—there stated at 3 acre feet per acre. Elsewhere in the report referring to the Marias and Lower Milk river project the duty is stated at 2 acre feet per acre, the Sun river project at $1\frac{1}{2}$ acre feet per acre and in the Sixth Annual Report, page 111, under the heading 'Lower Milk river Project,' it is stated 'the average duty of water, from measurements taken on private canals, is 18 inches.' The higher duty stated for the St. Mary reservoir is undoubtedly to cover losses from seepage and transportation to the irrigable area.

It would seem reasonable to conclude that if the St. Mary river project were confined exclusively to the reclamation of the lands in the Blackfeet Indian Reservation the capacity of the St. Mary reservoir would be limited to 250,000 acre feet or less. It is possible, indeed, that the comparatively recent suggestion to reduce the capacity to 150,000 acre feet may have been influenced by this consideration. The first time the reduced capacity is mentioned is in the Fourth Annual Report for 1904-5, at page 180, as follows:—

The first plan for storage on St. Mary lakes involved the construction of one earthen dam about 50 feet high at the outlet of the lower lake. Lately consideration has been given to the construction of a dam between the lakes, or at the outlet of the upper lake, and studies at various heights at both locations have been made. The difference of elevation between the two lakes is 12 feet. * * * Provisions for lowering the upper to the level of the lower lake have also been studied * * * Effective height of dam, 31 feet. Provision is also made for excavating the channel between the upper and the lower lake, so that the former can be drawn down to the elevation of the latter lake. The reservoir capacity under these conditions will be 150,000 acre feet.'

No mention is made of this feature in the Fifth Annual Report and only the following brief reference in the Sixth Annual Report, page 115.

'It is proposed to build a low storage dam. * * * The dam will have a maximum elevation of 45 feet above the bed of the river. The effective height will be 30 feet. The reservoir thus created will have a capacity of 150,000 acre feet.'

Assuming, the reservoir to be developed to 250,000 acre feet capacity, however, it would not seriously affect Canadian interests. The records of flow of the St. Mary river near the international line show that in 1903, the flow of the stream approximated 250,000 acre feet in the winter months of November, December, January, February and March, while the mean flow in the five years 1902-1906, inclusive, show over 121,000 acre feet during these months, and the balance could be diverted or stored in the other months, without appreciable loss to the Canadian consumer of water.

An ingenious table was constructed at Washington during the visit there of Messrs. Galt and Magrath in June, 1905, which endeavoured to show that the United States could, by diversion and storage, at St. Mary reservoir, practically absorb all the water of St. Mary river, and that during the years 1903 and 1904, with the

SESSIONAL PAPER No. 19e

diversion canal flowing 1,000 cubic feet per second continuously during the irrigation season, there would, in addition to the quantity of water so diverted, be an *accumulated* storage of over 500,000 acre feet. Such a condition is of course possible, but it would mean the construction of a dam of an effective height of over 70 feet, in place of 50 or 30 feet now considered, and that would involve greatly increased expenditure in addition to that now contemplated, which approaches, if it does not exceed, the limit for a practicable enterprise, even from the view point of the United States government.

The interests of the Canadian consumer of water would not be imperilled, his share in the direct flow of the stream would not be seriously diminished if the United States would store the winter flow of the stream. With the St. Mary reservoir constructed, the United States would be in a better position to conserve the winter flow than Canada could possibly be. The flow would, naturally, be impounded in the reservoir, while, in Canada, artificial channels would have to be constructed to divert the flow from the stream bed to the reservoir sites removed from it and that always entails added expense and risk and danger of loss of retaining the available supply. To secure the most thorough conservation of the available water supply the retention by the United States of the winter flow in the St. Mary reservoir is the natural course to pursue. If, however, in the event of a failure to agree on some plan of division, the United States should not adopt the course of conserving the winter flow and resort to storage in other seasons of the year, it would be Canada's policy to care for the winter flow at added expense to balance the loss ensuing in the irrigation season resulting from any diversion or storage by the United States in that period.

Reference has been made to the possibility of the United States relying solely upon the direct flow of the stream during the irrigation season for the amount necessary for the full supply of the acreage in the Blackfeet Indian reservation, which has been estimated at 1,000 cubic feet per second.

If that diversion were made directly within United States territory, there would be left for Canada, on the mean flow of the stream as shown by the records from 1902-1906, the following:—

	Second feet.
April.	0.00
May.	600.80
June.	2,159.00
July.	1,029.00
August.	23.60
September.	0.00
October.	0.00

Save in the month of June, this would be entirely inadequate for the requirements of Canada, and resort would then be had to storage or diversions from other sources of supply.

That condition, however, presumes that the United States would propose to ignore all recognition of prior existing rights on the stream, either in their own territory or in Canada. And, it does not appear that the United States is prepared to assume such an attitude, even in the extreme event of a disagreement with Canada as to the division and use of waters in international streams.

Outside of the declaration in the memoranda submitted to Messrs. Galt and Magrath in June, 1905, which can scarcely be regarded as an official utterance, that no servitude could lie against the United States for any water that occurs in its territory, there is no statement in any official document or report that would suggest that the United States authorities will refuse to recognize the vested rights of any consumer of water to his legal appropriation. On the contrary, there are several utterances that clearly indicate a solicitude to respect such rights.

9-10 EDWARD VII., A. 1910

In the document emanating from the United States Secretary of State, June 15, 1907, there is a specific declaration that Canada shall respect the amount of water diverted from the Milk river in the United States, for beneficial purposes by private canals prior to November 1, 1905, and that the United States shall respect the amount of water diverted from the St. Mary river in Canada for beneficial purposes as of the same date. Upon that feature, there may be disagreement only as to the amounts to which such appropriators are entitled.

In addition to this, however, there is a significant pronouncement in the Third Annual Report, page 306, in which the Consulting Engineers, Messrs. Davis, Wiser and Savage reporting on the St. Mary Milk river project, say:—

‘It should also be emphasized that any recognition of rights for the diversion of water from Milk river are necessarily subject to the prior rights of inhabitants of Milk River Valley, in Montana. * * * Neither the American nor the Canadian Government has the right to interfere with prior appropriations either from St. Mary or Milk river.’

In other words, the doctrine of prior appropriation of water in the streams of the arid region is recognized as paramount to all other principles of government of the flow of water, and that is true whether the streams are all in one country or in two countries with different governments and laws. Apart from that consideration, if, in the failure of the United States and Canada to agree upon some plan for the division of water in St. Mary and Milk river, the United States should undertake the Blackfeet project as an independent enterprise and divert sufficient water for that purpose regardless of the prior rights of individual appropriators from the stream in Canada, it would thereby merely present the opportunity to Canada to take reprisals in the Milk River Valley. Canada could not affect the United States appropriator from the Milk river to the same extent, in volume of water, as the United States could affect Canadian appropriators in the St. Mary river, but a larger number of individual interests would be affected and these a class of interests which the United States government are not willing to prejudicially affect.

To summarize the situation as it is affected by the alternative plan to reclaim lands in the Blackfeet Indian Reservation by the waters of the St. Mary river, the conclusion is that the project scarcely justifies the expenditure that would be involved and that in the event of the United States proceeding with the project, regardless of financial returns, the amount of water reasonably diverted for such purpose cannot seriously imperil Canadian interests, unless the United States proceed to the extremity of ignoring the prior appropriations of Canada, which, while possible, is not probable in consideration of all the interests elsewhere that would thereby be affected.

The last of the three courses outline originally for the utilization of the waters of the St. Mary river—what is known as the Marias project—does not seem to be worthy of serious consideration and as a project connecting the waters of the St. Mary and Marias rivers in one enterprise has apparently been disregarded by the Reclamation Service officials themselves.

It may be well, however, to briefly refer to its salient features, so that the character of any possible enterprise that may divert St. Mary river water to the detriment of Canada's interest may not be overlooked.

This scheme would involve the construction of a main canal from the St. Mary river (1) across the South Fork of Milk river, a distance of 43.8 miles, (2) a continuation of that canal from the crossing the South Fork to Cutbank creek, a further distance of 25.9 miles, (3) running the diverted waters through the natural channels of Cutbank creek and Marias river, 100 miles or more (no expense involved), (4) the construction of a dam in the bed of the Marias, 195 feet high and 2,246 feet long on top and (5) the construction of a main diverting canal thence to the lands in the lower Milk river valley over 75 miles in length.

SESSIONAL PAPER No. 19e

In none of the reports is any estimate found of the cost of the main canal beyond the crossing of the South Fork, there is no record of any survey having been made beyond that point towards the Marias river or Cutbank creek.

And it would appear that any consideration of combining the two streams had been early abandoned, as in the Fourth Annual Report for 1904-5 it is stated, page 185:—

During the earlier stages of the investigation, the development of Marias river was considered as a connecting link between the St. Mary basin and the lower Milk river valley. As a result of later surveys it is now believed best to consider the diversions from Marias river as a separate project not connected with the Milk river project.

No mention is made of the Marias project in the Fifth Annual Report, but in the Sixth, for 1906-7, reference is again made to it, at page 121, in substantially the same language as quoted above, with this significant addition.

Various consulting engineers have examined this project but it has not yet received formal approval on account of the unusually difficult engineering features.

These features are mainly the dam already mentioned, 195 feet high and the construction of a canal out of the river canyon, the bed of which canal is designed to be 170 feet above the bed of the stream.

The dam is merely a diversion and not a storage dam, though it might be concluded to be the latter from superficial perusal of the reports, which state that between the elevation of the bed of the canal and the top of the dam the storage capacity is in excess of 450,000 acre feet. But it is not to be considered that storage would be permitted to the elevation of the top of a dam built in the bed of a stream of the torrential character of the Marias river and the plans provide for a spillway whose elevation is 15 feet below the top of the dam.

No estimates have been published of the probable cost of the Marias project, as an independent enterprise, and none of the cost of extending the St. Mary project to permit its waters to run into Cutbank creek.

There is, however, the estimate of the cost of the canal to the crossing of the south fork of the Milk river, given in the First Annual Report, page 211, as \$1,397,000.

At page 212, of the same report, an estimate of \$12,000 per mile is placed upon the first 20 miles beyond the South Fork in the canal heading towards Sage creek, and, as the country is of much the same general character towards Cutbank creek, this estimate may be accepted for the present purpose. There are 19.3 miles of canal from the South Fork to Cutbank creek, which at \$12,000 per mile would cost \$281,600, to which should be added 15 per cent for engineering and contingencies—\$34,740, in all \$266,340. This added to the cost of the South Fork would give a total of \$1,663,340 as the necessary expenditure to Cutbank creek.

Some notes should be made in that connection. In the estimate in the First Annual Report, the section 'from head to North Fork of Milk river,' is placed at \$533,500, while the only bid submitted amounted to \$767,500 for practically one-half of this distance, which would indicate that for this section at least, the estimate should be multiplied by three to give an approximation of the cost. On the same section, engineering and contingencies are placed at \$120,530, while it has already been shown that \$147,656.85 have been expended under this item with practically no construction work completed.

To the above must be added the cost of the dam in the bed of the Marias river, and of the 75 miles of canal line from that river to the Lower Milk river valley, the first 17 miles of which are canyon work—the first six in 'steep side hill construction of soft sandstone in horizontal strata.' The cost of the canal line and part of the cost of the dam, even if the Marias project is otherwise utilized for the irrigation areas apart from the Lower Milk river valley would be chargeable to the St. Mary project. And while it is not possible to make any approximation of the total cost, it must be evident

9-10 EDWARD VII., A. 1910

that an expenditure of from \$3,000,000 to \$5,000,000 is inevitable if the United States is compelled to divert the St. Mary river to the Lower Milk river valley, via the Marias river route.

It is not surprising, therefore, to find that the Reclamation Service officials have tacitly abandoned this third alternative plan nor to find the consulting engineers reporting (Third Annual Report, page 307) that:

'It appears probable that if the Canadian Government does not make satisfactory guarantees to justify the construction of the St. Mary reservoir and canals, the Marias drainage basin can be made to serve all available lands in Milk river valley * * *'

even when they add—

'It is probable that the acreage cost will be greater than that of St. Mary * * .'

Upon the alternative plan of the Marias river route, therefore, there is no room to conclude otherwise than that the United States will not adopt it, in the event of failure of negotiations with Canada, solely on account of the expenditure involved.

The situation is plainly that the United States desiring to impound water of the St. Mary river within its own territory and to divert the same to the Lower Milk river valley, after 8 years of investigation, has abandoned all other routes as impracticable on the ground of expense, is now knocking at Canada's door for possession of a right of way and the occupation of an existing canal or channel naturally constructed—the bed of the Milk river in Canada. Failing to secure that on reasonable terms, the United States will develop an enterprise to reclaim the Blackfeet Indian Reservation at a cost in excess of what the Reclamation Service officials have regarded as the limit of expenditure of similar enterprises. For this privilege of possession, the price to be paid is 'the equitable division and use of the waters of both streams in either country.' And it is for Canada to fix that price—the consideration being 'water'—the most valuable commodity to the section of Canada affected, now and in the future, and it is incumbent upon Canada, for the present interest and future welfare of Alberta, to secure the highest price possible for the advantage the United States desires.

Before proceeding to outline the various details which should, for Canada's interest be embodied in the agreement between the two countries, it is necessary to comment upon the proposal submitted by the United States officials of date June 15th, 1907.

It is proposed in paragraph 2, that during the period from March 1st to September 30th of each year the '*water available for irrigation*' in the two river systems shall be apportioned equally to each of the two countries.

The phrase might more appropriately, more concisely and more specifically be 'the natural flow' of the two streams to which, it will be noticed, the document subsequently reverts.

The equal division does not seem to be borne out in detail at a later part of the document. Paragraph 5, contains a detailed statement of the share to which each country shall be entitled, which detail does not carry out the equal division, or the language employed is misleading. Under the terms of this paragraph, the United States would be entitled to 'all the water of the St. Mary river and its tributaries diverted in the United States for use in its territory and not delivered into Milk river or its tributaries.'

This may mean all that water *now* diverted from the St. Mary river in the St. Mary river valley within the territory of the United States. If that is intended, the date and amount of the appropriation of such water relative to the date of appropriation of the Canadian canal from the St. Mary river should be stated. If such appropriation is prior to the Canadian appropriation, it would have the superior right—if not, Canada should have the first right and that should be so defined, as

SESSIONAL PAPER No. 19e

Canada is elsewhere in the document required to recognize the prior appropriation within United States territory.

The same remarks apply to subsection (b) with reference to appropriations within United States territory from the Milk river above the crossing of such streams (Milk river and its tributaries) into Canada, presumably the Western crossing.

Subsection (c) certainly does not carry out either the letter or the spirit of the general pronouncement of the equal division of the waters of the two streams. It declares that the United States shall be entitled from March 1st to September 30th to 'all water of Milk river not in excess of 2,000 cubic feet per second flowing into the United States at the eastern Milk river crossing of the International Boundary.'

It is true that statement is qualified by the parenthetical addition (including stored water of the St. Mary river turned into it). But there would be times and seasons when such stored water would not be turned in and even then, by the terms of this subsection, the United States would be entitled to 2,000 second feet of the flow of the Milk river, if that amount of water was flowing in the stream. It is also true that if that amount of water, or more, reached the Eastern Milk river crossing of the international boundary, as the natural flow of the stream after Canada has been permitted to divert its share, the United States would be entitled to divert it, but it is noticeable that no provision is made for Canada's diverting any part of it—the statement is merely that the United States shall be entitled to all the water of Milk river not in excess of 2,000 second feet, and, in the sense of phraseology at least, is at variance with the purported spirit of the agreement.

In the same sense, the language employed in the subsections of this paragraph dealing with Canada's interest is misleading.

Subsection (d) provides that 'all water of St. Mary crossing the International Boundary into Canada not in excess of 2,000 cubic feet per second,' shall be Canada's share.

But that is not the agreement in the preceding part of the document. There it is declared that the water available for irrigation in the two streams shall be apportioned in equal amounts. If the flow of the St. Mary river on the 25th day of June was 7,000 second feet, at the International boundary or at any point above the Canadian intake, Canada would be entitled to 3,500 second feet of that flow—there is no suggestion of a limitation to 2,000 second feet or any amount other than one-half the flow of the river.

Subsection (e) provides that Canada's share shall include 'all water of Milk river and its tributaries diverted in Canada for use in its territory including any water of St. Mary river turned into Milk river by Canada and which has been measured under item 'd.'

The agreement is that Canada shall be entitled to one-half of the water in Milk River. The language of this subsection would seem to convey the right to Canada to divert all water in the stream within its territory.

Altogether paragraph 5 is ambiguous and misleading and appears to be wholly unnecessary. It is plain that the document intends to convey the right to each country to divert for its own use within its own territory, one-half of the water in each stream, and it is further intended that each country shall have the right, subsequently, to turn its share of water in either stream into the other stream and thereupon divert it, to its own use in its own territory.

Paragraph 3 provides that the failure of either country to fully utilize its rights under the agreement, shall not add to or diminish the rights of the other country. But it should provide that the other country may avail itself of the water in excess of its share not otherwise fully utilized; on the general understanding that this agreement contemplates the fullest conservation of all the waters of both streams by the two countries interested.

9-10 EDWARD VII., A. 1910

Paragraph 4 provides for the utilization of what may be termed the winter flow of the streams and proposes to give the United States the flow of the St. Mary River and Canada the Milk River during that period. There is no objection to that arrangement, but it may be pointed out that thereby the United States secures much more than an equitable division of the waters. During the months from October 1st to March 1st, the mean flow of the St. Mary river at the International boundary for the years 1902 to 1906, inclusive, has been 132,629 second feet, while the mean flow of the Milk river, for the same period, at Havre for the years 1898 to 1906, inclusive, has been 47,789 second feet, or slightly in excess of one-third of the St. Mary flow. And the flow of the Milk River in Canada, at or near the intake of the Canadian canal would be very much less than at Havre, in many months it would be Nil.

Before leaving these features of the document, attention should be directed to the division of the seasons, from March 1st to September 30th of each year being proposed apparently, as the 'irrigation season,' while from October 1st to March 1st would be the winter or 'non-irrigation season.' To such division, Canada must enter the most emphatic objections. Ordinarily, and particularly in localities similar in all conditions, climatic and other, to Montana and Alberta the 'irrigation season' extends from April 1st to November 1st, the experience in Alberta, and Montana in its northern section is entirely similar in all affecting conditions, has suggested a later commencement to the 15th of April or 1st of May. Water for irrigation purposes—for fall ploughing if nothing else—is required to the end of October or as late in the season as water will run in the canals without danger to structures from freezing.

The seasons must be divided as from April 1st to November 1st for the 'irrigation season' and from November 1st to April 1st for the 'winter season' and upon that Canada must insist.

Paragraphs 6 and 7 will be considered in connection with the duty of the commission to be appointed for the carrying out of the agreement and the division and distribution of the waters of the streams.

There is no objection to paragraph 8, save that provision should be made to bring the United States under the same mandate, as Canada would inevitably seek to return into Milk river waters from St. Mary river—stored or direct.

Paragraph 9 provides for the recognition of prior appropriators from the Milk river in the United States antedating November 1st, 1905, and binding Canada to observance of the amounts as judicially determined. Merely as a matter of record, the date must be changed to May 1st, 1903, that being the date of the commencement of construction of the Canadian Milk river canal, from which, were the Milk river all in one country and one irrigation district, Canada would seek to have its decree of appropriation for beneficial purposes dated. It could comply with all the ordinary requirements of judicial investigation of such matters, surveys were then commenced construction followed with due diligence and application to beneficial purposes followed on the completion of construction.

There is some room to doubt the advisability of blindly accepting the judicial determination of the appropriations of water in the Lower Milk river valley. There has been many instances of 'swollen decrees' in the arid regions of the United States and under the conditions which have prevailed in that district in the past few years with public opinion fomented on the question of the diversion of waters of International streams, there is every likelihood that an effort will be made to secure large decrees in all probability in excess of the actual carrying capacities. As Canada is to be brought under the operation of such judicial determination, in the event of an agreement between the countries, and as adjudication has not yet been made nor is likely to be made for some time to come, it would not seem to be unreasonable to ask that Canada should be permitted to have its day in court on that matter. It would, at least, be the part of prudence for Canada to make systematic measurements of the various

SESSIONAL PAPER No. 19e

canals and ditches seeking for decrees. In doing so there would be no unusual or unprecedented act, the officials of the Reclamation Service have measured the dimensions and capacity of the St. Mary canal of the Alberta Railway and Irrigation Company, without asking permission to do so.

Paragraph 10 provides for a similar recognition by the United States of the prior appropriation of Canada in the waters of the St. Mary river, setting the date at November 1st, 1905, and the amount, by measurement (of the United States officials) at 310 cubic feet per second.

While the present information is that there is no appropriation in the United States prior to November 1st, 1905, again merely to preserve the records, this date should not be admitted. It would be entirely within legal limits in other irrigation districts to give to this appropriation the date of the original filing by the Dominion government of the intent to divert and appropriate water for beneficial purposes (September 21st, 1897), and in any event, this should not be later than July 10th, 1898, the date on which the Alberta Railway and Irrigation Company commenced surveys, which were duly followed by construction, by diversion and by application to beneficial purposes.

On the question of the amount of that appropriation full discussion has elsewhere been fully made.

Paragraph 3 relieves the United States from all liability from damage of any kind in the channel of Milk river.

This feature merits very serious consideration and its determination may affect the price paid by the United States for the privilege conveyed. The position that country would occupy is a distinctly unique one. It obtains possession of a right of way and a naturally constructed channel of over 215 miles in length, of the capacity of, at least 2,000 second feet and seeks to avoid the cost of maintenance, which, otherwise, as in an artificially constructed canal in its own territory, would be a considerable item. Damage will occur and expense accrue, in spite of the most careful conduct and management of the transported waters. In the past, the stream volume has been erratic and fluctuating, in years of high floods, the maximum volume has been of short duration, and for the greater part of any season and from one season to the other the channel has been almost dry. In the future, there will be annually in addition to the natural flow, be that great or small, the continuous flow for a comparatively lengthened period of a body of water which approximates the maximum discharge of the stream as shown on the records of the past few years, embracing seasons of high floods.

The gradient of the stream averages throughout the distance to be utilized by the United States in the transportation of these waters, that is down the North Fork and the main stream from the western to the eastern crossing of the International boundary, a distance of 215 miles, a total fall of 1,474 feet, or practically 7 feet per mile throughout. That rate of gradient, of course, changes in certain parts of the route and becomes less as the stream proceeds east; from the junction of the two forks to the eastern crossing the average fall is $5\frac{1}{2}$ feet per mile, and it is, undoubtedly, less than that at the extreme eastern portion of its course in Canadian territory.

The soil composing the bed of the stream is largely of fine mud, and with the declivity continued above erosion is inevitable.

Upon this feature, there is the preliminary report of Mr. Louis E. Fontaine, who, during 1907, conducted a survey to determine the elevations along the course of the river, and from that report the following extract is made:—

‘Respecting the intention of the United States government to divert water from St. Mary lakes into Milk river, and running the same through Canadian territory, this scheme, if carried out, will, I believe, do no end of damage to the river flats in ranges 15 to 23. The existence of canyons and narrow gorges in ranges 14 and 15 have the effect of holding back the water, and, under existing conditions, more or less damage is done by floods at every freshet, and if the present flow of the river

9-10 EDWARD VII., A. 1910

is to be increased, it is more than evident that the lands adjacent to the river in above-mentioned number of ranges will, thereby, be greatly affected."

The result of such erosion would be most readily and detrimentally experienced by the United States itself, in the event of the construction of the Chain Lakes reservoir, where silt will surely accumulate, but erosion may, doubtless will, affect vested interests in the valleys within Canadian territory, and it may be found necessary to maintain elevations by the erection of structures, all of which, under the present proposal, would be borne by Canada. There are now certain structures on the stream, the dam at the intake of the Canadian canal and the railroad bridge crossing of the Alberta Railway and Irrigation Company, and these, as well as highway bridges that will be constructed, might, sooner or later, be damaged if only by the effects of erosion.

Certainly, provision should be made that stored waters be turned into the channel of Milk river only at such times as shall be permitted by and shall always be under the control of the commission to be created. And further than that, every consideration indicates the justice of some form of compensation for maintenance—at least that the United States should pay for the construction of checks or drops and the repairs of damage to all existing structures that have, in the judgment of the commission, been caused by the continuous flowing of water turned into the channel by the United States.

And it should be provided that the United States shall be liable for any damages created in the St. Mary river in Canada in the event of any accident occurring to the dam of the St. Mary reservoir. For such damage within its own territory, the United States would be legally liable—the extension of the liability across the boundary line should justly be made.

The creation of a commission to carry out the provisions of any agreement between the two countries is inevitable—it is not necessary that such commission should exceed two—one appointed by each country, and an oversman. Provision for the expense of the commission may be implied, it should be specified that each country should pay its own commissioner and one-half of the salary of the oversman, and the general expense of the commission should be borne equally by both countries.

The commission would be empowered with the general supervision and management of the waters of the two streams, and the division of these in accordance with the provisions of the agreement, and for that purpose, would provide for the operation of the joint system by rules and regulations that would be deemed necessary and in accordance with the requirements. The commission would primarily arrange for the establishment of such means of measurement of the two streams and their various tributaries, from which would be determined daily the amount of the available natural flow to be divided, and similar provision would be made for the measurement of all stored water to be subsequently turned into either stream by either country. For the purposes of the original agreement, the provision for the creation of a commission need only be treated in a broad general sense, the details of its powers and functions to be considered later, at the time of its creation.

The following suggestions are made of matters that should be embodied in the agreement, the form and language to be used in such would probably be left for the legal advisors of each country to outline.

St. Mary River.

That the United States shall be entitled to all the water of the St. Mary river at the dam site of the St. Mary reservoir, for storage in the said reservoir, during the months of January, February, March, November and December, in each year.

That Canada shall be entitled to divert from the natural flow of the St. Mary river, through the canal of the Alberta Railway and Irrigation Company, or other

SESSIONAL PAPER No. 19e

means, 1,400 cubic feet per second during the months of April, May, June, July, August, September and October, in each year.

That the excess flow in the St. Mary river during the months of April, May, June, July, August, September and October, in each year, above 1,400 cubic feet per second referred to, shall be divided equally between the two countries.

Milk River.

That the United States shall be entitled to all the water of Milk river during the months of January, February, March, August, September, October, November and December in each year.

That Canada shall be entitled to divert from the natural flow of the Milk river, through the canal of the Alberta Railway and Irrigation Company, or other means, the present capacity of that canal agreed upon between parties to be 330 cubic feet per second during the months of April, May, June and July in each year, subject to the rights of appropriations from the Milk river with the territory of the United States prior to the date of May 1, 1903—as that amount shall be judicially determined and now understood to be about 350 cubic feet per second.

That the natural flow in the Milk river during the months of April, May, June and July, in each year, in excess of the amount of 330 cubic feet per second and 350 cubic feet per second, more or less, shall be equally divided between the two countries.

That Canada shall not be entitled to divert any portion of waters stored by the United States in the St. Mary river and turned into Milk river and in no event be entitled to divert any water from Milk river except during the period mentioned above, and in the amount mentioned above, unless it shall turn into the channel of Milk river any water from other sources, to which amount it shall be entitled to divert, less due allowance for losses in transportation.

The failure of either country to fully utilize the rights hereby agreed to shall not be regarded as adding to or diminishing the rights of other countries, but either country shall be entitled to avail itself of any water utilized by the other country under the terms of this agreement.

The amounts of water chargeable to each country under the several items enumerated above shall include all the water of the two river systems whether used directly or indirectly by the two governments or by private parties in their respective territories.

That in no event shall either country divert from either stream any portion of water stored by the other country and turned into the other stream, but each country shall, in addition to its share of the natural flow of each stream as previously provided by this stream, be entitled to the full amount of water turned by it into each stream from stored supplies or from the other stream, due allowance being made in all cases for losses in transportation, from evaporation, seepage or percolation, to be determined and fixed by the Commission to be created for carrying out the provisions of this agreement.

That the share of the United States shall in any event include so much of the available natural flow of the Milk river within its territory as represents the amounts of the appropriations of water from said stream by private appropriators, as shall be judicially determined to have been applied to beneficial use on or before May 1, 1903, in the Lower Milk river valley in Montana: Provided, that at the time of such judicial determination, Canada be permitted, if it shall so elect, to be present and to submit any facts or information that may affect any such judicial determination in time or in amount of the various decrees to be rendered.

It is further agreed that, wherever one-half of the natural flow of the Milk river shall be less than such amount as measured aforesaid, the share of Canada shall be diminished so that the said country shall receive of the natural flow of the entire

9-10 EDWARD VII., A. 1910

Milk river system only the excess, if any, beyond such amounts as have been judicially determined, due allowance being made for all losses in transportation and for the increment of return or seepage waters within the territory of Canada.

The share of Canada shall in any event include so much of the available natural flow of the St. Mary river as has been appropriated by the authorization granted by the Dominion Government to the Alberta Irrigation Company and diverted and applied to beneficial use by its canal heading from the said St. Mary river as of date July 10, 1898, the same to be measured at the intake of the said canal, and that amount shall be subject to the appropriation of any amount of water diverted and applied to beneficial use by any appropriator within the territory of the United States, if the same is prior to the date of July 10, 1898.

It is understood that the amount of water which Canada, through the agency of the Alberta Irrigation Company, is entitled to, as of date July 10, 1898, is 1,400 cubic feet per second.

The term, natural flow, as used herein, is to be understood as the flow of each river system, from all its sources, which would pass the point or points specified in this agreement, if no artificial obstruction has been placed in the stream or any of its tributaries and if no water had been diverted from or added to the flow before reaching the point or points specified, and the amounts of such natural flow shall be determined by the commission to be created for the purpose of carrying out the provisions of this agreement.

That the United States shall be liable to Canada and to any citizen of Canada for any and all injury or damage created by failure of any artificial structure built by the United States within their own territory, but in connection with the development of this enterprise of combining the waters of the St. Mary and the Milk rivers, or for any and all damage caused by the United States diverting water into either stream from the other. The United States shall further be liable for the cost of maintenance of the stream bed of the Milk river and for the cost of all structures rendered necessary to maintain and protect the vested rights of the Canadian government or of settlers in the Milk River valley, within Canadian territory, and for any and all damage to existing structures on Milk river, in Canadian territory, whether these are owned or controlled by the Canadian government or by private parties.

That for the purpose of carrying out the provisions of this agreement, a commission shall be created which shall have supervision of the diversion of the waters of the two rivers, and the measurement and distribution thereof in accordance with the terms of this agreement. The commission shall be empowered to make such rules and regulations as shall be necessary for the proper and effective operation of this agreement. The commission shall consist of one member, appointed by the Governor General of Canada, and one member appointed by the President of the United States, and those two members shall be empowered, in the event of a disagreement between them upon any matters arising out of this agreement, to select a third member, when the commission shall consist, for the purpose of deciding any point of disagreement, of these three members.

It is understood and agreed that each country shall pay for the services and expenses of its own member of said commission, but shall bear one-half of the expense of the additional third member, whenever required, and of the general expenses of the commission.

For the purpose of clearly outlining what Canada's share in the waters of both streams would amount to, in practical form, as relating to the irrigation possibilities of the area tributary to the streams, Tables C, D, E and F have been prepared and are hereto annexed.

Tables C, D and E consider the result of the proposal on the basis of the mean flow on the streams, and table F considers the result on the basis of the recorded flow in a season of high water, as 1903.

SESSIONAL PAPER No. 19e

In years of mean flow, Canada would receive (1) sufficient water to directly supply 210,000 acres of land with $1\frac{1}{2}$ acre feet throughout the year, (2) for the full supply of Lumpy Butte, Chinlee, Mary lake, Taylorville, Milk river and Raymond reservoirs, in all 163,542 acre feet, and (3) nearly two-thirds supply from the Brunton and Shanks lake reservoirs, in all 123,139 acre feet.

The total reservoir supply would aggregate 286,681 acre feet, which, upon the duty of $1\frac{1}{2}$ acre feet per annum, would provide for the irrigation of 187,787 acres of land, in addition to the 210,000 acres of land provided for from the direct supply of the stream.

In years of high flow, such as 1903, Canada would receive (1) sufficient water to directly supply 210,000 acres, as in years of mean flow, and (2) sufficient water for the full supply of all reservoirs at present within the scope of the territory explored, with the exception of Crow Indian lake—in all 489,889 acre feet and there would be 4,100 acre feet surplus. The total supply would care for 539,327 acres, on the duty of $1\frac{1}{2}$ acre feet per annum, compared with 630,000 acres now known to be within the scope of an irrigation system.

It is proper to add, at this time and in this connection, that with the prevailing climatic conditions, the duty of $1\frac{1}{2}$ acre feet per annum is ample for the successful cultivation of the character of crops best adapted to that region.

It would appear probable that Canada would more frequently secure the maximum delivery than the tables would indicate. 1903 is the only year embraced in the tables which shows a high flow in the St. Mary river, while it is well known that 1902 was as high, and higher in certain months of the year—the latter part of May and all of June and July, while 1907 was also a year of high flow—exceeding 1903 in net yield throughout the irrigation season.

In years of mean flow, the United States would receive 338,900 acre feet which would represent 1.58 acre feet per acre per annum on the area actually irrigable in the Lower Milk river valley 215,000 acres in place of 250,000 acres (see Fifth Annual Report Reclamation Service, page 154). In years of mean flow, the United States would receive a slightly greater duty of water for its *whole irrigable area* than Canada would for two-thirds of its present known irrigable area.

In years of maximum run off, the United States would receive 604,820 acre feet which would be in excess of the present contemplated capacities of its reservoirs, the St. Mary reservoir 150,000 acre feet and the Chain Lake reservoir 437,500 acre feet. And it would give a duty of 2.81 acre feet per acre per annum on its whole irrigable area in the Lower Milk river valley.

So far as the relative irrigable areas in each country are considered it must be admitted that Canada's proposal represents a fair and equitable division of the waters of the two streams and in regard to the interests, present and future, of the principality that is Canada's, no other division that would mean for her a smaller share of water should be considered.

If that territory were to be valued at the present rate applied by the Reclamation Service for irrigated lands in the Lower Milk river valley—\$40 per acre—there is for 630,000 acres a value of \$25,200,000 and Canada cannot, at this or at any other time, afford to throw away the opportunity to create such value, even if it takes a generation to realize it, as it doubtless will.

The position, in relation to the St. Mary river and its water supply, occupied by the appropriation of the Alberta Railway and Irrigation Company is, in a legal sense, as the law is constructed by the courts of the said region, invulnerable.

It could be contended that that company is merely the agent of the government of Canada, and, as has already been pointed out, that the government is, on somewhat different lines, carrying on the same policy within its territory as the United States is pursuing under the Reclamation Act.

9-10 EDWARD VII., A. 1910

The Alberta Railway and Irrigation Company, in other words, is the successor of the Government of Canada in the appropriation of water from the St. Mary river, under order in Council, September 21st, 1897, as it is, as a matter of fact, by the authorization of the Government, giving the Company a license for 500 second feet of the low water flow and 2,000 second feet of the high water or flood flow of the St. Mary river and granting the Company 15 years in which to complete its works.

In effect, the Irrigation Company in no respect differs from similar irrigation companies in the said regions of the United States, where such companies, commencing upon undertaking of this magnitude, would make a filing against the waters of the stream upon a certain date and would be granted that appropriation from that date upon satisfying the proper authorities that the acts constituting appropriations, the diversion and application to beneficial use, had been carried on with due diligence and within a reasonable time.

It would not have been the part of commercial wisdom or of ordinary prudence for the Alberta Railway and Irrigation Company, or its predecessor, in 1898, to have constructed a canal with a capacity of 2,000 second feet, as it must have realized, even without experienced advice, that considerable time would elapse before that capacity would be consumed, in a then uninhabited region. It was certainly the part of wisdom and the exercise of good business sense, at the same time keeping good faith with the government to do exactly as has been done, develop and enlarge their system in relation to the demands upon it, with due diligence prosecuting the work to which they had put their hand and given their pledge.

It would not be necessary to make any extended argument to convince a referee in the adjudication of decrees of appropriation in any arid region of the United States, that, under such circumstances, the company was entitled to the protection of the court and an award of the full amount of their claim from the date of original filing. The whole subject is most exhaustively and yet concisely treated in Mills Irrigation Manual, Chapter 6, Parr. 48 to 51, inclusive, 'The Doctrine of Relation,' the whole of which might be quoted to the advantage of this consideration. But one sentence will indicate the strength of the contention that the Alberta Railway and Irrigation Company's appropriation should be respected in its full amount.

Diligence has been defined to be the 'steady application to business of any kind, constant effort to accomplish any undertaking.'

This proposition is so plain that it would be considered idle to discuss it in any irrigated section of the United States and the assertion is ventured that if the conditions which to-day exist in the St. Mary river on both sides of the international boundary existed in any stream in Colorado, where a ditch company had a filing similar to that of the Alberta Railway and Irrigation Company and the United States Government had a project similar to the St. Mary reservoir, the officials of the Reclamation Service would not dare to set up the claim in any court of competent jurisdiction that the prior appropriator should be reduced to the quantity of water then flowing in its canal.

Only the fact that an imaginary line divides this source of water supply would seem to justify the extraordinary attitude these officials assume. And yet, there is contained in the letter from Hon. John Hay, secretary of state, of the 29th December, 1902, the following statement: 'It is proposed to deal with this matter in strict conformity with the laws concerning the rights to the use of the water as recognized by the courts of the arid region both on this side of the International boundary and on the other. The principle may be stated in the language of section 8 of the Reclamation Act of June 17, 1902 (32 Stat. 388).

'Provided that the right to the use of water acquired under the provisions of this Act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure and the limit of the right.'

SESSIONAL PAPER No. 19e

And, in its full sense, the appropriation of the Alberta Railway and Irrigation Company complies with every requirement of that proviso, and with the provisions of the Northwest Irrigation Act, and with the authorization from the Dominion Government, it is appurtenant to the land irrigated and beneficial use shall be the basis, the measure and the limit of the right.

And the Secretary of State could have quoted with equal force the portion of Section 8 preceding the portion he did incorporate in his letter, which preceding portion provides that nothing in the Reclamation Act shall affect or interfere with the laws of any state or territory (on this or the other side of the boundary) relating to the control, appropriation, use or distribution of water used in irrigation, or any vested right acquired thereunder, and nothing in the Act shall affect any right of any State or of the Federal Government or of any appropriation or user of water from any interstate stream or the waters thereof.

To the proposition embodied in the proposal of the United States that the appropriations of the Alberta Railway and Irrigation Company shall be understood as 310 second feet to date from November 1, 1905, there is but one answer, that it shall be recognized as for 2,000 second feet from July 10, 1898, the date of the commencement of surveys.

In the draft submitted as the proposal of Canada, the appropriation has been stated as 1,400 second feet. And that solely for the reason that there is now tributary to the canal system of the Alberta Railway and Irrigation Company 210,000 acres available for irrigation and that, under the duty of 150 acres to the second foot specified in the water contracts, would call for 1,400 second feet. That reduction from 2,000 second feet is a concession to the existing condition and an effort to arrange a fair and equitable division of the waters of the stream. Legally, Canada can stand on the claim for 2,000 second feet; by extension of the canals, the area that would consume that quantity can be readily obtained.

On the Milk river, the position of the appropriation of the Alberta Railway and Irrigation Company is analogous, though it has been considered on somewhat different lines. The authorization from the Canadian government gives the company the right to 500 second feet in low flow and to the 1,500 second feet in flood flow, with 15 years to complete the works. Canada's proposal arranges for the diversion from the Milk river in Canada of only 330 second feet during the summer months, and one-half of the flood flow above that quantity. The stated quantity in the present capacity of the constructed canal which was designed and built solely for the purpose of diverting flood waters and storing them in the Milk river and Raymond reservoir for use in connection with the St. Mary canal and in other reservoirs on the Milk river drainage.

Recognition was made of the prior appropriations by American consumers of water in the Lower Milk river valley and reference to Table B will show that the mean flow of the stream will ordinarily during the months from April to July, inclusive, provide for these prior American rights and the Canadian appropriation of 330 second feet.

Above that would be flood flows which it would be and has been Canada's purpose to conserve and, on that feature, there is apparently no conflict between Canada and the United States.

In a memorandum from Hon. John Hay, Secretary of State, of date 10th May, 1904, it is stated:—

that the diversion of water in the upper part of the stream (Milk river) in Canada will work no injury during the time of floods, but that when the water is most needed, the taking out of the scanty supply will destroy the irrigated farms further down the valley.

9-10 EDWARD VII., A. 1910

It is during the time of floods and only during that time, that the Canadian canal would fill the purpose for which it was designed, and Canada and Canadian settlers and irrigation purposes are just as earnest as the government and people of the United States in their desire to further the development of the arid region in the best way, the conservation of all the flood waters available in the region.

The secretary might well have added that when water is most needed, it is not to be had in the direct flow of the Milk river either in Canada or in the United States, as ordinary observation of that stream will demonstrate, as well as a study of the records of the stream flow maintained by the Reclamation Service.

The United States' proposal embodies a provision that the share of that country shall include the amount of water judicially determined to have been applied to beneficial use on or before November 1, 1905, by canals taking water from the Lower Milk river valley in Montana, with the understanding that such amount is in excess of 350 cubic feet per second.

Upon the principle involved in this feature there is no room for controversy, Canada has always been ready to recognize the doctrine of prior appropriations for irrigation purposes. The Canadian canal from Milk river was constructed with the view solely of diverting the flood waters of that stream for storage purposes. The available records of the flow of the stream at the time of its original construction clearly showed that it could not be relied upon, for a direct supply in any quantity and for any length of time, and its purpose was wholly to divert its flood waters to the reservoirs known as the Milk river reservoir and Raymond reservoir of the canal system of the Alberta Railway and Irrigation Company with the further purpose, in the ultimate development of that system, of conveying waters stored in the Shanks Lake reservoir to the lands that can be irrigated in the vicinity of the canal.

But, recognition has been made that there were prior appropriations in the Lower Milk River valley in amounts that were uncertain and undefined, as the fact that these rights are only now under judicial consideration shows.

The following statement of canals diverting directly from the Milk river in Montana, is taken from the Fourth Annual Report of the Reclamation Service, page 182:

Canal.	First used.	Capacity Measured.	Capacity Claimed.	Acres Irrigated.	Total, 1904.	Discharge, 1905.
		s. f.	s. f.	acres.	s. f.	s. f.
Fort Belknap	1894	130	750	10,900	16,678	13,969
Paradise	1895	19	50	1,400	1,902	1,974
Winters-Anderson	1900	12	100	440	.....	.....
Harlem	1895	73	1,250	7,820	7,256	5,564
Indian Reserve	1901	125	125	1,000	.....	2,204

This table indicates the great difference between the capacity claimed and the capacity (actual) as measured presumably by the officials of the Reclamation Service, and that, in itself, should be a reason, if any were needed, for the right Canada should have and certainly should claim to be heard upon the judicial determination of these appropriations. Canada should, at least, make careful measurement of the capacities of these various ditches before entering into any obligation to recognize the judicial determination.

The following development of the prevailing duty of water from the above table is of interest:—

SESSIONAL PAPER No. 19e

Fort Belknap.. . . .	1-19 to 1-53	acre	feet	per	acre.
Paradise.. . . .	1-36 to 1-41	"	"	"	"
Harlem.. . . .	1-71 to 1-93	"	"	"	"
Indian Reservation.. . . .	2-20	"	"	"	"

It is not possible to state conclusively, of course, whether these various canals in these years secured all the water the irrigated lands required and the duties developed were *in the canal* as compared with being in the reservoir for which the Reclamation Service makes provision of 2 acre feet per acre.

It appears by the latest report of the Reclamation Service that the Indian Reservation ditch, of date 1901, has been awarded a priority of appropriation over all ditches in the stream, in the amount of 125 second feet, the decision being based on the terms of a treaty with the Indians. The decision has been affirmed by one Appellate Court and is now before the Supreme Court of the United States and that, pending a decision from the Court, the adjudication of all other appropriations has been postponed.

In addition to these appropriations aggregating 359 second feet, there are others diverting water from tributaries as follows:—

Canal.	First used.	Capacity Measured.	Capacity Claimed.	Area Irrigated.	Total Discharge.
		s. f.	s. f.	acres.	s. f.
Cook	1895	50	75	1,700	4,628
Matheson.....	1892	28	125	2,715	2,575
West Fork.....	1899	13	100	800	.....
Reser.....	1900	8	50	240	.....
Rock Creek.....	1904	48	120	.....	.....

The same discrepancy between actual and claimed capacity is noticeable, as is the reduced duty of water.

These ditches, being supplied by tributaries may not affect any relation between the two countries in the use of Milk river water, unless their location be such as to adversely affect the supply of water to a ditch in the main stream and this feature should also be investigated.

The strictly commercial aspect of the situation has now to be considered.

It must be evident that the United States have concluded after years of investigation, that the only feasible proposition for the diversion of the St. Mary waters and their application to lands in the Lower Milk river valley is by way of the Milk river channel in Canada.

It was early demonstrated that the all-American route across country just south of the international boundary involved a prohibitive expenditure, estimated at \$4,600,000 on very insufficient data and by somewhat primitive methods.

The cost of the canal route by way of the Marias river has evidently not been estimated, largely, doubtless, because even the most superficial investigation shows that it also is prohibitive and its evident abandonment and the abandonment of the St. Mary project itself, would seem to be plainly foreshadowed in this statement of the consulting engineer's report. (Third Annual Report, page 307):—

It appears probable that if the Canadian government does not make satisfactory guarantee to justify the construction of the St. Mary reservoir and canals, the Marias drainage basin (by itself) can be made to serve all available land in Milk River valley.

9-10 EDWARD VII., A. 1910

Elsewhere in this review, it has been shown that the effort to connect the St. Mary basin and the Lower Milk river valley by the Marias route will involve an expenditure of anywhere from three to five millions of dollars.

In the last resort, there will be, according to the declaration of the Sixth Annual Report, the reclamation of 100,000 acres of land on the Blackfoot Indian Reservation and though the Reclamation Service officials have not submitted estimates on the cost of that enterprise—have apparently not even made more than the most general preliminary surveys,—it has been shown, conservatively, that this project will involve the expenditure of between $3\frac{1}{2}$ and 4 millions of dollars.

All these considerations do not bear out, indeed they question the reliability of the statement of the Reclamation Service officials to Messrs. Galt and Magrath, June, 1905, that 'in short, by expenditure of say \$20 to \$25 per acre of land reclaimed the principal part of the water supply can be kept within the United States.'

On the contrary, it must be very apparent that between the point where the St. Mary diversion canal reaches the North Fork of the Milk river, and the point where the water would again be diverted in the Lower Milk river valley, there is a gap which will cost the United States, by any other route than through the bed of the Milk river, between 3 and 5 millions of dollars to span. That, in other words, is the least amount the United States would expend if it is not allowed to use the channel of the Milk river, and, as the Reclamation Service officials expressed it in the interview in June, 1905, already referred to:

The critical question for the United States is whether any economy of construction would justify giving up any considerable amount of water which might be used in future development of the arid lands.

The proposal outlined shows that in years of mean flow Canada would receive 601,861 acre feet as its share of the waters of the combined streams. Not all of that is what the United States would 'give up' for the privilege of securing transportation of its waters through the channel of Milk river. It has already been pointed out that the United States concedes and recognizes the prior appropriations of Canada, as of date November 1, 1905, up to 310 second feet against the St. Mary river and 330 second feet against the Milk river. That limitation will be disputed, as considered elsewhere, for the present, the amounts may be assumed.

The proposal contemplates that Canada shall not divert water from the St. Mary during the winter season, November to March, inclusive. There is nothing, however, to prevent Canada making diversion throughout the whole year, there is nothing in the grant from the Canadian government to the Alberta Irrigation Company limiting its use of the water granted to any period of the year, irrigation season or otherwise, and so far as this immediate consideration is affected, Canada would have the prior right to the flow of at least 310 second feet throughout the whole year which would amount to 226,300 acre feet. And reference to the table of flow of the St. Mary river will show that the mean flow of the stream yields 310 second feet or more in every month of the year.

The proposal limits the diversion from the Milk river to the four months April to July, inclusive, in the amount of 330 second feet, and to that amount and for that period Canada would have an undisputed right, conceding to the United States the prior right of diversion for about 350 second feet. The table of mean flows will show that both these amounts can be fairly relied on from Milk river in these four months of April to July. And 330 second feet in that period would amount to 80,520 acre feet.

These two amounts total 306,820 acre feet against the total diversion from both streams by Canada, under this proposal, of 601,681 acre feet, leaving a balance of 294,861 acre feet which, in the extreme event, is the maximum which the United States might claim it would be paying for the privilege of using the Milk river channel.

SESSIONAL PAPER No. 19e

It may be conceded that the amount of 330 second feet of diversion from Milk river is the maximum which Canada could claim at this time, and it may also be conceded that, in normal years, that amount could be secured by Canada only in the months from April to July, inclusive, and even rarely in July as the tables of flow will show.

But the position of the St. Mary river is altogether different. Elsewhere, consideration is had of the position the grant to the Alberta Irrigation Company occupies as against the stream. It is contended that Canada cannot be limited in its rights to divert water from the St. Mary river, to the amount of water being used for beneficial purposes upon any particular day, least of all November 1, 1905. The canal of the Alberta Railway and Irrigation Company has at this time a capacity of at least 800 second feet and by gradual extension and enlargement within its charter can beneficially serve an area of 210,000 acres requiring at least 1,400 second feet capacity.

In the former case, of 800 second feet, Canada would be entitled by the present capacity of the constructed canal to all of the mean flow of the St. Mary river in the months of January, February, March April, September, October, November and December and to 800 second feet in the remaining months of the year which would amount to 435,177 acre feet to which would have to be added the amount secured from Milk river, 80,520 acre feet, making a total of 515,697 acre feet, as compared with 601,861 acre feet. That is to say, the United States would give 86,164 acre feet as the price of securing transportation through the Milk river channel.

On the contention that Canada has a right to 1,400 second feet through the canal of the Alberta Railway and Irrigation Company it would be entitled to all of the mean flow of the St. Mary river in every month of the year excepting only May, June and July and to 1,400 second feet in these months. That would amount to 559,440 acre feet, to which would be added the amount secured from Milk river of 80,520 acre feet, a total of 639,960 acre feet, as compared with 601,861 acre feet. That is to say, that upon the strongest and yet reasonable claim of its prior appropriations, Canada would be conceding 38,099 acre feet to the United States in this matter of the equitable division and use of water of the St. Mary river to accommodate her neighbour on the southern boundary.

On Canada's least claim, the United States would concede or pay 294,861 acre feet as the price of entry. What is the right to that body of water worth?

At the present time in Colorado, where the conservation of all available waters has reached a high stage of development, an acre foot of water is valued at from \$20 to \$40, ranging with location, the character of crops that can be produced and the assurance of the water supply. That price includes the cost of construction of reservoirs and the actual ownership of these reservoirs and the transporting canals, &c.

Lower Milk river project (Page 111):—

Value of irrigated land.	\$40 per acre.
Duty of water.	2 acre feet per annum.

Marias project (Page 119):—

Value of irrigated land.	\$40 per acre.
Duty of water.	2 acre feet per annum.

Sun river project (Page 121):—

Value of irrigated land.	\$40 to \$200 per acre.
Duty of water.	1½ acre feet per annum.

Huntley project (Page 101):—

Value of irrigated land.	\$50 to \$100 per acre.
Duty of water.	2½ acre feet per annum.

9-10 EDWARD VII., A. 1910

It is accepted as an axiom in irrigated districts that the value of the water, or water right, is one-half of the value of the irrigated land. Applying this to the figures given above, the value of an acre foot is found to range from \$10 to \$66.66, the latter high figure in connection with the Sun river project where the higher value of irrigation lands is doubtless due to the proximity of some of these lands to populous centres like Great Falls. On the Lower Milk river and Marias projects, the value of the acre foot is ascertained to be \$10.

On that value, the price to be paid by the United States, on the present proposal, 294,861 acre feet would represent \$2,948,610 in cash, or in round numbers \$3,000,000.

It will be noted, of course, that in years of stream flow above normal, such as 1903, Canada's share would be above the figures quoted, would be in fact, as shown in table. 207,309 acre feet above that amount, (808,990 acre feet as compared with 601,681 acre feet) or in such a season it might be said the United States was paying \$2,073,090 more, or \$5,021,700 in all, capitalized value for this privilege. On the other hand, there would be years below the normal flow, and in all the years, both countries would share equally in the deficiency or excess of water available for irrigation purposes and it may be stated in general terms that the United States would be paying from \$3,000,000 to \$5,000,000 for the privileges required.

It is very clear from examination of the various plans investigated by the Reclamation Service officials that the United States cannot by any other method, connect the St. Mary basin with the lands of the Lower Milk river valley, at a lower figure.

The proposal has to be considered also from the relative amounts of water secured to each country. It will be observed that in years of maximum flow, the United States will secure 2.40 acre feet per acre per annum, and in years of mean flow, 1.35 acre feet per acre per annum. The first is in excess of the duty established by the Reclamation Service of 2 acre feet per annum. Indeed, the average secured by the United States will be greater than shown, as the area actually irrigable is 215,000 acres in place of 250,000 acres, yielding 2.81 acre feet in maximum years and 1.53 acre feet in years of mean flow.

On the other hand, Canada secures but 1.28 acre feet in years of maximum flow and .95 acre feet in years of mean flow for the area available for irrigation within its territory which is nearly three times as great as that within the United States.

The following tables are attached hereto for reference:—

Table A. Flow of the St. Mary river, at the International line, for years 1902-1906, inclusive, taken from the various reports of the United States authorities.

Table B. Flow of the Milk river at Havre, Montana, for the years 1893-1906, inclusive, taken from the various reports of the United States authorities.

Table C. Mean flow of the St. Mary river, at the International line, developed from Table A, showing the share of the waters between Canada and the United States on the basis of Canada's proposal.

Table D. Mean flow of the Milk river, at Havre, Montana, developed from B, showing the share of the waters between Canada and the United States on the basis of Canada's proposal.

Table E. Combination of the mean flows of the St. Mary and Milk rivers, developed from tables C and D showing the share of the waters of both streams between Canada and the United States, on the basis of Canada's proposal.

Table F. Combination of the flow of the St. Mary and Milk rivers, in 1903, a year of maximum flow, developed from Tables A and B, showing the share of the waters of both streams, in a season of maximum flow, between Canada and the United States on the basis of Canada's proposal.

SESSIONAL PAPER No. 19e

Notes.—Regarding Table A, there are many reasons to doubt its accuracy. The very high flows during the months of January, February and March of 1903, seem to be out of all proportion, even knowing that the preceding year of 1902 was one of phenomenally high flow in the stream. That high flow did not, however, continue after the month of August.

On the other hand, the items of maximum flow in 1903 show the peak of the high water to be about 7,000 cubic feet per second. In 1904, measurements were made of floods marks extremely well defined, about one mile north of the boundary, which on careful and conservative calculations, developed a discharge of over 50,000 cubic feet per second. That quantity does not seem to the writer to be exaggerated in his memory of the enormous floods that passed the intake of the Alberta railway and Irrigation Company's canal in 1902.

Again, analysis of the records of flow reported by the United States Reclamation Service reveals serious discrepancies, particularly in the years of 1904 and 1905, when the recorded flows of the St. Mary river and Swift Current creek at the St. Mary Reservoir site in Montana are, together, in excess of the recorded flow at the International line in the months of June, July, August, September, October and November in 1904, and the flows of these streams and Kennedy creek also are in excess of the flow at the international line in April, June, July, August, September and November in 1905.

In 1905 the Alberta Railway and Irrigation Company maintained a gauging station at the intake of their canal, and the records obtained from it show that the flows recorded by the U. S. Reclamation Service at the boundary in that year are in excess of the Alberta measurements in May, June, July and October. During October the U. S. measurements showed 47,470 acre feet at the International line, the Canadian measurements 9,213 acre feet.

In 1906, the records at the International line are in excess of the records of the Canadian Canal in the months of May, July and August, in the percentage of 8, 11 and 24.

In 1907, the Canadian records show a very high river throughout the season, being in excess of the U.S. records for 1903 during the months of June, July, August and September, the total yield of the stream from June to October, inclusive, in 1907 exceeding the yield in those months in 1903 by over 55,000 acre feet.

It should also be noted that during the years from 1898 to 1901, inclusive, during portions of the year the Alberta Railway and Irrigation Company maintained a hydrograph station near their intake and from these it is developed that the normal flow in these four years was 724,400 acre feet as compared with the normal flow of 712,701 acre feet at the International line, in the years from 1902-1906. With that record and the record of 1907, it is evident that a slightly greater normal flow would be available than has been considered.

Regarding Table B of Milk river discharges it has been accepted wholly from United States records. Save in the year 1904, Canadian measurements are few and isolated.

The serious falling off in the stream after July is specially worthy of notice—there is no flow for instance from August, 1905, to March, 1906. After mid-July and throughout August, 1904, the flow of the stream at the intake of the Canadian canal averaged less than 35 second feet, while the average flows at Havre in that year, after July were, as follows:—August, 5 second feet, September, 3 second feet, October, 19 second feet, November, 35 second feet, December, 25 second feet. Tables C, D, E and F are self explanatory.

TABLE A.
ST. MARY RIVER, NEAR CARDSTON, ALBERTA, 1902-1906.

—	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1902			...						35,940	29,330	20,350	67,144	
1903	52,572 ^a	50,705 ^a	78,028 ^a	63,550	105,759	309,421	179,790	86,329	65,990	56,384	31,885	26,931	1,107,294
1904	13,773 ^a	11,504 ^b	12,298 ^b	55,636 ^c	124,328	166,255	114,367	57,245	24,992	13,097	7,250 ^b	7,654 ^b	610,403
1905	5,534	4,165	10,510	17,550	74,710	146,500	101,000	52,080	22,080	47,470	17,730	14,760 ^a	514,100
1906—W.S. 207	6,150	5,280	7,690	28,600	92,200	136,000	113,000	58,200	37,400	46,500	65,500	22,100	619,000
Mean in acre feet...	19,507	17,913	27,132	41,334	98,249	189,544	127,039	63,463	37,280	38,556	28,535	28,118	712,701
Mean in sec. feet....	314.6	319.9	437.6	688.9	1600.8	3159.0	2049.0	1023.6	621.3	621.9	475.6	453.5	...

^a—Approximated.

^b—Estimated from gauge heights.

^c—

^d—

TABLE C.

ST. MARY RIVER.

Mean flows, from United States Reclamation Service Records, near Cardston, Alberta:—

		Canada.	United States.	Flood Water to be Divided Equally.
January.....	19,507		19,507	
February.....	17,918		17,918	
March.....	27,132		27,132	
April.....	41,334	41,334		
May.....	99,249	{ 49,624		4,285
		44,800		
June.....	189,544	84,000		105,544
July.....	127,039	86,800		40,239
August.....	63,463	63,463		
September.....	37,280	37,280		
October.....	38,556	38,556		
November.....	28,535		28,535	
December.....	28,118		28,118	
Acre feet.....	717,675	445,875	121,210	150,608
Flood waters.....		75,304	75,304	
		521,179	196,514	

Canada's share would provide 210,000 acres with 1½ acre feet—315,000 acre feet—and would fill:—

Acre feet.	
Lumpy Butte	12,473
Chin Coulee	50,000
Mary Lake	21,658
Taylorville	42,836
Shanks Lake	79,212 out of 109,347 acre feet.
	206,179

Leaving Shanks lake 30,135 acre feet, to be filled in years of extreme floods as 1902, 1903, 1907.

TABLE D.

MILK RIVER.

Mean flows, from United States Reclamation Service Records, at Havre, Montana:—

	Acre feet.	Canada. Acre feet.	United States, Acre feet.
January.....	9,267	.....	9,267
February.....	10,240	.....	10,240
March.....	14,411	.....	14,411
April.....	37,529	19,800	17,729
May.....	42,379	20,460	21,919
June.....	44,313	19,800	24,513
July.....	22,716	20,460	2,256
August.....	7,947	.....	7,947
September.....	5,822	.....	5,822
October.....	13,554	.....	13,554
November.....	6,951	.....	6,951
December.....	7,777	.....	7,777
	222,906	80,520	142,386

Canada's share would fill:

	Acre feet.
Milk River Reservoir.....	29,000
Raymond Reservoir.....	7,575
Brunton Reservoir.....	43,945
	80,520

Leaving:

	Acre feet.
Brunton Reservoir.....	23,055
Verdigris Reservoir.....	150,000
	173,055

to be filled in years of extreme flood, as in 1899, 1902, 1903, 1907—four years out of nine recorded.

9-10 EDWARD VII., A. 1910

TABLE E.

COMBINATION OF ST. MARY RIVER AND MILK RIVER.

Mean Flows from United States Reclamation Service Records at Cardston, Alta.,
and Havre, Montana.

	Acre feet.	Canada's share.	United States share.
		Acre feet.	Acre feet.
January.....	28,774	.....	28,774
February.....	28,158	.....	28,158
March.....	41,543	.....	41,543
April.....	78,863	61,134	17,729
May.....	141,628	117,296.5	24,331.5
June.....	233,857	156,572	77,285
July.....	149,755	127,379.5	22,375.5
August.....	71,410	63,463	7,947
September.....	43,402	37,280	5,822
October.....	52,110	38,556	13,554
November.....	35,486	.....	35,486
December.....	35,895	.....	35,895
	940,581	601,681	338,900

Canada's available irrigable area 630,000 acres.
would secure 95 acre ft. per acre.
United States..... 250,000 acres.
would secure..... 1.35 acre ft. per acre.

SESSIONAL PAPER No. 19e

TABLE F.

COMBINATION OF ST. MARY RIVER AND MILK RIVER IN 1903.

From United States Reclamation Service Records at Cardston, Alta. and Havre Montana.

Showing division on basis of Canada getting 1,400 second feet from St. Mary River from April-October and one-half surplus. And from Milk River 330 second feet from May-July and one-half surplus.

—	St. Mary.	Milk River.	Total.	Canada's share.	United States share.
	Acre feet.	Acre feet.	Acre feet.	Acre feet.	Acre feet.
January.....	52,572	12,298	64,870	.....	64,870
February	50,705	11,107	61,812	.....	61,812
March.....	78,028	14,757	92,785	.....	92,785
April.....	63,550	59,266	122,816	92,583	30,233
May.....	105,759	66,344	172,103	128,832	43,271
June.....	309,421	58,015	337,436	225,117	142,319
July.....	179,790	27,362	207,152	153,755	53,397
August.....	86,329	23,242	109,571	86,329	23,242
September.....	65,990	9,759	75,749	65,990	9,759
October.....	56,384	8,485	64,869	56,384	8,485
November.....	31,835	6,843	38,678	.....	38,678
December.....	26,931	9,038	35,969	.....	35,969
Total	1,107,294	306,516	1,413,810	808,990	604,820

Canada's available irrigable area, 630,000 acres,
would secure 1'28 acre feet per acre.

United States available irrigable area, 250,000 acres,
would secure 2'40 acre feet per acre.

United States would fill St. Mary Reservoir 150,000 acre ft. capacity.
and Chain Lake Reservoir 437,500 "

587,500 acre ft.

with 17,320 acre feet surplus.

Canada would supply 210,000 acres with $1\frac{1}{2}$ ac. ft. per ac. = 315,000 ac. ft.
and would fill Lumpy Butte Reservoir 12,473 acre feet.

Chin Coulee	"	50,000	"
Mary Lake	"	21,658	"
Taylorville	"	42,836	"
Shanks Lake	"	109,347	"
Milk River	"	29,000	"
Raymond	"	7,575	"
Brunton	"	67,000	"
Verdigris	"	150,000	"

489,889.5

804,889.5

with 4,100.5 acre feet surplus.

9-10 EDWARD VII., A. 1910

One important proposition, important to Canada's interest, must not be overlooked in the final arrangement of any agreement with the United States.

For the full development of the plans involved in the most extensive reclamation of areas in Canada, it will be necessary to divert water from St. Mary river to Milk river partly to divert the direct flow of the former stream for direct and immediate use upon the lands tributary to the latter stream, but mainly to divert water for storage and mostly in the Shanks Lake reservoir, a very large basin with capacity in excess of 100,000 acre feet.

A thoroughly practicable route exists through Whisky Gap, and this route was carefully surveyed in 1904. The best line through the Gap would head about 3 miles south of the International boundary in the United States, and would again deflect into United States territory in the Willow Creek drainage for a total distance of $4\frac{1}{2}$ miles.

It is possible to keep this canal wholly within Canadian territory by the construction of a high diversion dam in the bed of the St. Mary river, which would throw back water into United States territory in any event, and by the construction of a high flume or siphon across the Willow Creek drainage just north of the International boundary.

From the engineering standpoint, this route is an admirable one and free from any construction difficulties. It would be about 23 miles long and the greatest depth of cutting would be 27.4 feet, and the greatest fill 35.3 feet and these could probably be reduced by locating the intake further up the river.

It is, in every sense, a much superior route to that now selected by the United States officials and might be submitted to them for adoption in the event of agreement being reached upon the division of waters.

It was brought to their attention early in 1905, and reference is made to it in the Fourth Annual Report, pages 180-181:—

A possible canal line from the St. Mary river, located partly in the United States and partly in Canada that might be less costly than the all-American Canal. Preliminary surveys of this international canal were made in 1905 * * * * *. The total length of the canal line is 23 miles. Preliminary estimates show that the canal would be *somewhat cheaper* of construction than the upper line, and the annual maintenance would also probably be less.

My own estimates, on very generous allowance of quantities and of unit prices—25 cents per cubic yard for earth, as compared with 22½ cents per cubic yard of the bid rejected by the United States officials for the St. Mary canal as too high, indicated that a canal of a capacity of 2,000 second feet, in place of 850 second feet, could be constructed for less than one million dollars.

This important proposition should be held in reserve, it is possible, as suggested, that Canada might desire to obtain a right of way for portions of the Canal within the territory of the United States. On the other hand, it might be possible to acquire such right of way by the purchase of areas in individual ownership, though as the territory through which it would pass is within the limits of the Blackfeet Indian Reservation, it would seem likely that, to secure such individual ownership, the permit of the Indian Department would be required.

But no agreement with the United States at this time will be complete that does not, at least, make some preliminary arrangements for such right of way, should Canada desire to obtain it at some future time.

SESSIONAL PAPER No. 19e

DEPARTMENT OF STATE,
WASHINGTON, June 15, 1907.

EXCELLENCY.—With a view to bringing to a determination the question so long discussed relating to the use of the waters of the St. Mary river and the Milk river, which flow across the 49th parallel boundary between the United States and Canada, I beg to offer the following suggestions for a basis of a treaty for the equitable apportionment of those waters.

It is hereby agreed between the governments of Great Britain and the United States that the waters of the Milk river and the St. Mary river and their tributaries shall be apportioned in perpetuity for use in the two countries according to the following stipulations and agreements:—

1. That for the purpose of this agreement the St. Mary river and the Milk river and their tributaries which are now separate and independent river systems shall be treated as though they were the waterways of a single drainage system.

2. That the water available for irrigation from these two river systems throughout the period from March 1st to September 30th of each year, both dates included, shall be apportioned to each of the two countries from day to day in equal amounts.

3. That the failure of either country to fully utilize the right hereby agreed upon to one-half of the available water, during the period specified in paragraph 2, shall not be regarded as adding to or diminishing the rights of the other country.

4. That the period in each year not specified in paragraph 2, the United States may divert or hold back in storage reservoirs any portion of the natural flow of St. Mary river; and Canada may divert any portion of the natural flow of Milk river (in neither case to interfere with existing rights).

5. That the apportionment of water hereby agreed upon during the period specified in paragraph 2 shall be determined in the following manner: The share to which the United States is entitled shall be the total of the following items:—

(a.) All water of the St. Mary river and its tributaries diverted in the United States for use in its territory and not delivered into Milk river or its tributaries.

(b.) All water of Milk river and its tributaries diverted in the United States for use in its territory, above the crossing of such streams into Canada.

(c.) All water of Milk river (including stored water of the St. Mary river turned into it) not in excess of 2,000 cubic feet per second flowing into the United States at the eastern Milk river crossing of the International boundary.

The share to which Canada is entitled shall be the total of the following items:—

(d.) All water of St. Mary river crossing the International boundary into Canada not in excess of 2,000 cubic feet per second.

(e.) All water of Milk river and its tributaries diverted in Canada for use in its territory including any water of St. Mary river turned into Milk river by Canada and which has been measured under item 'd.'

6. The total quantity of water to which each country shall be entitled according to the items enumerated in paragraph 5, shall be maintained at equal amounts as nearly as may be possible from day to day during the period specified in paragraph 2, under such regulations as shall be agreed upon by the commission provided for in paragraph 14.

7. The amounts of water chargeable to each country under the several items enumerated in paragraph 5 shall include all the water of the two river systems whether used directly or indirectly by the two governments or by private parties in their respective territories.

9-10 EDWARD VII., A. 1910

8. That Canada shall in no event divert from the Milk river any portion of the stored St. Mary river water turned into the Milk river system by the United States, due allowance being made for losses by evaporation or seepage, while passing through the channels of the Milk river system as fixed by the commission provided for in paragraph 14.

9. The share of the United States shall in any event include so much of the available natural flow of the Milk river as shall be judicially determined as having been applied to beneficial use on or before November 1, 1905, by the canal systems taking water from the Lower Milk river in Montana, the same to be measured at the intakes of said canal systems, and whenever one-half of the natural flow of the Milk river shall be less than such amount measured as aforesaid, the share of Canada shall be diminished so that said country shall receive of the natural flow of the entire Milk river system only the excess, if any, beyond such amount of the decreed beneficial use. It is understood that the amount of water heretofore diverted for beneficial use from Lower Milk river in Montana as being in excess of 350 cubic feet per second, when the same was available.

10. The share of Canada shall in any event include so much of the available natural flow of St. Mary river as has been applied to beneficial use on or before November 1, 1905, by the canal taking from St. Mary river in Canada, the same to be measured at the intake of the said canal; and whenever one-half of the natural flow of St. Mary river shall be less than such amount, measured as aforesaid, the share of the United States shall be diminished so that the said country shall receive of the natural flow of the entire St. Mary river system only the excess, if any, beyond such amount. It is understood that the greatest amount of water diverted from St. Mary river in Canada as shown by measurement has not been in excess of 310 cubic feet per second.

11. The term (natural flow), as used herein is to be understood as the flow of the river system in question which would pass the point or points specified if no artificial structure had been placed in the stream channel and if no water had been diverted from or turned into it. Such natural flow shall be determined by the commission provided for in paragraph 14.

12. That this agreement for the diversion of the waters of the Milk and St. Mary river systems shall be regarded as a full settlement of all existing and future claims of both countries to these waters.

13. That the United States shall not be liable for damages of any kind resulting from high water stages or floods of Milk river, whether at times when water from St. Mary river is being carried in Milk river or not.

14. That the diversion of the waters herein agreed upon shall be done under the supervision of the commission, one member to be appointed by the president of the United States, one member to be appointed by the Governor General of Canada. This commission shall have supervision over the measurement and distribution of the water and shall be empowered to make appropriate rules and regulations to carry into effect the provisions of this agreement. In all cases of a failure on the part of this commission to agree upon any matters which it is authorized to decide, the members shall be empowered to select a third member and for the purposes of deciding the points of disagreement the commission shall consist of the three said members.

Those suggestions have been prepared by the officers of the Reclamation of Irrigation Service of the United States, and I trust that they may serve as a basis upon which we may bring this matter to an early conclusion satisfactory to both Canada and the United States.

I have, &c.,

ELIHU ROOT.

INTERNATIONAL WATERWAYS TREATY—ADDITIONAL
CORRESPONDENCE.

DEPARTMENT OF THE INTERIOR,
DOMINION ASTRONOMICAL OBSERVATORY,
OTTAWA, CANADA, November 15, 1909.

MEMORANDUM.

In considering the effect of Article 6 of the Waterways Treaty upon irrigation interests in Canada, a question of interpretation presents itself with regard to the most vital point of all, the amount of water which Canada should receive.

The share of Canada is one-half the aggregate flow of St. Mary's and Milk rivers and their tributaries. The question is where the rivers are to be measured for the purpose of the determination of the total which is to be divided. This is not directly stated in the Treaty.

The point is of little consequence so far as regards St. Mary river because the great bulk of its water is derived from one source and the course of the river on either side of the boundary line is short.

The case of Milk river is different, and measurements at different places will give very different results, according as more or less of the river is taken into account.

Milk river has a short course from its head waters in Montana to the boundary, it flows for about 110 miles in Canada, and then crosses into Montana again, and continues in that State till it falls into the Missouri, some 300 miles below the last crossing of the boundary.

Hitherto calculations (as Mr. Anderson's) of the share of Canada in Milk river waters have been based upon measurements at Havre, Montana, which is some 60 miles below the point where the stream leaves Canada. (Havre records have been used because there are no regular records above that point).

The draft treaty of the State Department in 1907 proposed the eastern crossing of Milk river by the boundary line as a determining point.

By providing that the United States should take all the water in excess of a certain amount passing that point, it terminated the Milk river there, for the purpose of the treaty. Canada would have had no concern with what happened further down the river. The present treaty does not contain a similar provision.

It provides that Milk river and its tributaries in Montana, Alberta and Saskatchewan shall form one stream with St. Mary's river and its tributaries, and Canada's share shall be one-half of the aggregate water.

I submit that the effect of this is to include for the purpose of determining the amount of Canada's share all the water which shall be in the whole Milk river from its source to the Missouri although for the 300 miles of the lower part of its course, Canada is physically unable to take any water from it, Canada's share of this water would frequently be in excess of the flow within her own territory and she would be entitled to take the balance of her share from St. Mary's river.

There are no figures available as to the size of Milk river at its mouth, but it is certainly much larger there than at the boundary line, at least, in certain months, for between the two points it receives several tributaries from the Cypress Hills and

9-10 EDWARD VII., A. 1910

Wood Mountain, as well as tributaries from the south which drain the greatest part of Bear's Paw and Little Rocky Mountains, important sources during the early summer.

In the later summer and fall, Milk river near its mouth is probably nearly dry, as it is along its whole course, but the annual aggregate at its mouth is undoubtedly much greater than at the boundary line.

The foregoing is based upon the fact that the treaty uses the word Milk river without any limitation, and therefore the whole Milk river is meant. The Milk river, in Montana is spoken of as well as the Milk river in Canada.

Furthermore it is the Milk river and its tributaries in Montana, Alberta and Saskatchewan. Saskatchewan is expressly mentioned.

The Milk river itself never touches the province of Saskatchewan; it crosses the southern boundary of Alberta some twenty-five miles west of the Saskatchewan-Alberta line.

The reason Saskatchewan is mentioned is that several of the tributaries of Milk river rise in Saskatchewan or, rising in Alberta, flow into Saskatchewan. These flow across the line to Montana and fall into Milk river below the crossing of the boundary line. The most easterly of them falls into Milk river about 50 miles above its mouth, or two hundred and fifty miles below the boundary.

It should be noted that the proposed irrigation works of the United States extend along Milk river further down than this point, namely to Glasgow, some twenty miles only above the mouth of the river.

If we were to limit the Milk river for the purposes of the treaty to the part above the eastern crossing of the boundary line, we should cut out all these Saskatchewan tributaries, which the treaty expressly declares shall form part of the 'one stream.'

If 'Milk river' means only Milk river above the boundary, there is no provision in the treaty for dealing with these at all. The treaty is of no effect with regard to them, and the word 'Saskatchewan' in the treaty means nothing.

Hence if the Milk river of the treaty does not extend to the actual mouth of the river, it at least extends to the point where the most easterly Canadian tributary comes in.

It may be objected to this that it clashes with the provisions for the prior right of the United States to 500 second feet or three-fourths of the river. For a treaty is to be read, when its words are not explicit enough, by the intention of its framers, and it is well known that the intention of the priority was to secure certain private users of water, living in the valley of Milk river a long way above its mouth. To give them their prior supply at the mouth of the river would be absurd. However, the provision as to the priority has reference merely to a certain detail of distribution of the share of the United States and has nothing to do with the amount of the share. If Canada is prevented from getting her full share of Milk river at certain times, she takes the balance from St. Mary's river.

Respectfully submitted,

(Sgd.) W. F. KING.

HON. WILLIAM PUGSLEY,
Minister of Public Works,
City.

From Mr. Bryce to Lord Grey.

WASHINGTON, December 15, 1909.

My LORD,—I have the honour to inform you that Mr. Chandler Anderson of the State Department called upon me yesterday with respect to the points discussed with that Department by Mr. Pugsley and myself upon the instant. Mr. Anderson

SESSIONAL PAPER No. 19e

stated to me at some length the views of the United States Government upon the several questions of the St. Mary and Milk rivers, the Rainy river and the St. John river, but as he promised to embody these views in a letter which should set them out fully, and which should reach me very soon, it seems better that I should await their complete and authoritative statement in that letter rather than to convey them to you in a less perfect form.

I may however say that he gave me to understand:

(1) that the United States government intend to construct the reservoir on the upper waters of the St. Mary's river which Your Excellency's government desire, and which is, they say, really needed in the interests of their own irrigation projects:

(2) that while the United States government are considering, with care and deliberation, how best to deal with the Rainy river question, they recognize the importance of securing a due supply of water for the purpose of navigation in that stream, and

(3) that they see no objection to enlarging the reference to the Commissioners who are dealing with the question of the St. John river so as to enable them to inquire as to the feasibility and utility of a plan for improving the water flow by water storage.

I have, &c.,

(Sgd.) JAMES BRYCE.

The Right Honourable
The EARL GREY, G.C.M.G.,
Governor General.

From His Majesty's Ambassador at Washington to the Governor General.

From Mr. Bryce to Lord Grey.

BRITISH EMBASSY,

WASHINGTON, January 4, 1910.

My LORD,—I have the honour to enclose herewith a copy of a letter which I have just received from the Secretary of State conveying the reply of the United States government to the communications made to them by the Honourable Mr. Pugsley, Your Excellency's Minister of Public Works, and myself on the eleventh of December last.

It will be seen from this letter, and from the letter enclosed in it from the United States Secretary of the Interior that the United States government have not only fully and definitely determined to carry out and construct at St. Mary's lake on the upper course of the St. Mary's river the dam and reservoir which your ministers conceive to be necessary for securing a supply of water for irrigation purposes during the dry season in the Milk river, but have been and still are at work on the construction of a canal to carry the water from that reservoir to the Milk river, such canal being, as they observe, useless except for the purpose of feeding the Milk river from the aforesaid reservoir. The State Department have informed me privately that this reservoir will be of very large dimensions and they observe that it is absolutely necessary for the purposes of their own irrigation works on the lower course of the Milk river after it has left Canada to enter United States territory. They propose, as Your Excellency will observe, to push on the work of building the dam also as soon as the Treaty goes into effect.

As respects the Rainy river it will be observed that the United States government declare themselves equally resolved to secure a due supply of water in that stream for the purposes of navigation, and that they have told the Minnesota Canal and Power Company that if the latter proceed with their project they will be required to construct works sufficient to secure that due supply. It seems at present to be

9-10 EDWARD VII., A. 1910

doubtful whether the project will be proceeded with. But the United States government conceive themselves bound (if it should go further) to see that the interests of Navigation, which are common to both countries, are fully provided for and they appear indeed to be bound by law to do so.

As respects the St. John river, the United States government accede to the proposal made by Mr. Pugsley and myself that the question of the desirability of constructing storage works on the upper courses of that stream to secure a better supply of water for floating logs down it should be referred to the commission now sitting, for examination and report, and they are prepared so to instruct the United States members of the commission.

I have, &c.,

(Sgd.) JAMES BRYCE.

DEPARTMENT OF STATE,
WASHINGTON, January 3, 1910.

EXCELLENCY,—Referring to your recent inquiry in regard to the plans of the United States Reclamation Service with reference to the construction of a dam in the St. Mary lake in northern Montana, which was contemplated in connection with the apportionment of the waters of the St. Mary river and Milk river between the United States and Canada, under Article VI. of the Treaty between the United States and Great Britain signed on January 11th last, I have the honour to enclose herewith for your information a copy of a letter written to me on the 3rd instant by the Secretary of the Interior stating the plans of the Reclamation Service in response to a request for the information asked for by you.

It appears from this letter that the plans of the Reclamation Service in regard to this dam have not been changed since the pending treaty was signed, and that considerable preliminary construction work has already been done towards carrying out these plans, and that material is now being accumulated and work is still being carried on in preparation for the construction of the proposed dam; but that it is regarded as unwise to begin the actual construction of the dam pending the ratification of the treaty, although it is the intention of the Reclamation Service to construct the dam as rapidly as possible thereafter.

Referring also to your inquiry in regard to the project of the Minnesota Canal and Power Company, involving the diversion from the Rainy river drainage system into the St. Louis river drainage system in the State of Minnesota of some portion of the waters tributary to the boundary waters between that State and Canada. I have the honour to inform you that the status of that project has not changed since the treaty referred to was signed. Prior to that time (as stated in this Department's note to you of January 13, 1908) the application of the Minnesota Canal and Power Company for leave to make the proposed diversion of water had already been approved, by the War Department, subject to the condition that the Company should construct, under the direction of, and as required by, that Department, such supplemental dams and reservoirs 'as it may be found necessary to require at the time of executing the work to avoid interference with the navigable capacity or public use of the waters of Birch lake basin and the other various lakes and streams to which they are tributary.' It was further stated in that note that:—

It is understood that the condition thus imposed was drawn with a view to meeting the difficulties presented in the report of the International Waterways of the Department of State that the interests on both sides of the border should be equally protected, precisely as if they were all within the category of those that the War Department was bound to protect.

The amount of water which it is now proposed to use is only a small part of that which, in any view of the subject, the citizens of the United States would

SESSIONAL PAPER No. 19e

be entitled to use under an equitable distribution, and while the effect upon navigation under any conditions would be almost a negligible quantity, the proposed remedial or storage works are intended completely to do away with any detrimental effect whatever upon navigation.

The interests on both sides of the boundary in the preservation of boundary waters for navigation and other appropriate uses are identical, and the conditions which the War Department is bound under our laws to impose for the protection of those interests on the American side will necessarily prove equally advantageous to the interests on the Canadian side.

The Minnesota Canal and Power Company will be obliged to construct the necessary remedial and storage works required by the War Department before it will be permitted to put into operation its plans for the proposed diversion of water; but owing to the temporary suspension of this project pending the ratification of the Treaty referred to, the War Department has not as yet undertaken to determine the exact character or location of the dams and reservoirs which will be required for that purpose.

In response to your suggestion that the St. John river commission be authorized to investigate and report upon the feasibility and advisability of constructing a dam for the storage of surplus waters tributary to the St. John river, which could be released at the beginning of the dry season in order to prolong the period for floating logs on that river, I have the honour to inform you that I am prepared to instruct the American members of that commission to examine into this question and report thereon either jointly with or independently of the British members as may be desired.

You will perceive from this note and from the letter of the Secretary of the Interior which is enclosed, that it is the definite intention of this government to proceed with the storage works on the St. Mary and Milk rivers, the construction of which the Dominion government regards as essential for securing the Canadian interests in a due supply of water in that part of the Milk river which passes through Canadian territory.

You also perceive that as regards the Rainy river, it is the settled purpose of this government, in assenting to the project of the Minnesota Canal and Power Company or to any other project involving the diversion of water flowing into the Rainy river, to take all requisite steps, by dams and reservoirs if necessary, to secure an adequate supply of water in the Rainy river for navigation purposes, which would have to be done in any case in the interests of citizens of the United States navigating that river.

I trust that you will consider that the questions which were addressed by Your Excellency and Mr. Pugsley, the Canadian Minister of Public Works, to the Department on these points, are now answered in a manner satisfactory to His Majesty's government and the government of the Dominion of Canada.

I have, &c.,

(Sgd.) P. C. KNOX.

Enclosure from Interior Department, January 3, 1910.

H. E. The Rt. Hon.

JAMES BRYCE, O.M.,

Ambassador of Great Britain.

9-10 EDWARD VII., A. 1910

DEPARTMENT OF THE INTERIOR,

WASHINGTON, January 3, 1910.

The Honourable

The Secretary of State.

SIR,—In reply to your letter of December 24, with reference to construction of a dam in the St. Mary's river, at the outlet of St. Mary's lake, in northern Montana, I have the honour to state that there has been no change in the status of the plans referred to, and which have been discussed in the various annual reports of the Reclamation Service.

Work on the construction of a canal from St. Mary's lake to the head waters of Milk river has been continued during 1909, and a considerable portion of the canal has been excavated. It is proposed in 1910 to continue this work at a moderate rate until the treaty is disposed of. The canal, of course, will have no use or value unless the dam is built at the outlet of St. Mary's lake, raising the water to bring it into the canal.

In the meantime, material is being accumulated and work carried on economically in the hope that the treaty referred to will be completed at an early date.

There has been no change in the plans since the treaty was signed, and it is still the intention to construct the proposed dam as rapidly as possible after the treaty goes into effect.

Respectfully,

(Sgd.) R. A. BALLINGER.

Secretary.

OFFICE OF THE MINISTER OF PUBLIC WORKS OF CANADA,

OTTAWA, January 20, 1910.

MY DEAR SIR WILFRID,—In compliance with your request, I have given careful consideration to the despatch of the Right Honourable James Bryce, British Ambassador at Washington, to His Excellency the Governor General, dated the 4th of January, 1910, and to the copy of letter from the Honourable P. C. Knox, Secretary of State for the United States, dated the 3rd of January, 1910, accompanying the same, in reference to the Boundary Waters Treaty, so far as relates to the apportionment of the waters of the St. Mary's river and Milk river, and the proposed dam which the Secretary of State says the United States government intend to construct upon the St. Marys' river.

I observe that Mr. Knox states that it is the definite intention of the United States government to proceed with the storage works on the St. Mary's and Milk rivers, 'the construction of which the Dominion government regards as essential for securing the Canadian interests in a due supply of water in that part of the Milk river which passes through Canadian territory.' There seems to be a misapprehension on the part of the United States authorities in reference to the mode in which Canada would expect to derive an advantage from the construction of such storage works. The principal benefit which would be derived by Canada from the construction of these works would be the securing of an increased and regular supply of water for irrigation purposes by means of the St. Mary's river, because the flow down the Milk river would be very much more for the benefit of irrigation work in the United States than in Canada.

The letter of Mr. Knox would seem to indicate that the primary object of the United States government in constructing the proposed dam would be to divert the stored waters of the St. Mary's river by means of a canal to the Milk river, down which such stored waters would flow to that portion of the State of Montana, which is east of the point where the Milk river would recross the boundary into the United States.

SESSIONAL PAPER No. 19e

The expression of Mr. Knox of the intention of the United States government to engage upon these large and expensive works for the purpose of storing and conserving the waters for the benefit of both countries, would clearly indicate an intention that the commissioners should equally divide the stored waters, as well as the natural flow of both rivers, which are, under the treaty, to be regarded as one, in such manner as would prove most beneficial to each country; but this object would be defeated if the dam were so constructed as to only provide for carrying the water stored thereby to the Milk river by means of the proposed canal. For this reason, I regard it as essential to an equally beneficial division of the waters of both rivers that provision should be made for a due proportion of the stored waters of the St. Mary's river being allowed, under direction of the commissioners, to pass down the St. Mary's river into Canadian territory, instead of all stored waters being diverted to the Milk river.

If the United States authorities take this view, and give an assurance that in the construction of the dam provision will be made for the passing of the stored waters down both the St. Mary's and Milk rivers, in order that they, as well as the natural flow, may be divided in accordance with the spirit of the treaty. I am of the opinion that such assurance will be satisfactory, and remove a ground for serious criticism, which would otherwise be made against the treaty by those interested in irrigation projects upon and in the vicinity of the St. Mary's river, in Alberta.

I am, my dear Sir Wilfrid,

Yours faithfully,

WILLIAM PUGSLEY.

The Right Honourable
Sir WILFRID LAURIER, G.C.M.G.,
Premier of Canada.

WASHINGTON, D.C., February 4, 1910

Hon. WM. PUGSLEY.

DEAR DOCTOR PUGSLEY,—I met Mr. Chandler P. Anderson and Mr. Newell, Director of the Reclamation Service, at the Embassy to-day. Mr. Newell made the following statement:

In the original scheme of the Reclamation Service they proposed to take the water out of St. Mary's river by a canal at the river level, and to build a dam to provide storage in the lakes behind. As you will see in George C. Anderson's report, a dam fifty feet above the river level would give them 250,000 acre feet storage, or, if only thirty feet high, 150,000. The canal starting at the river level would give them very difficult work along the side-hill before they would get out of St. Mary's valley, and more recent surveys have shown that these difficulties are so great as to amount to impracticability. Consequently, they have raised the level of their canal, and now propose to take the water out at a height of 25 or 30 feet above the natural level of the river. Their dam would now be about 40 feet high for purposes of diversion primarily, not of storage. The only storage such a dam would afford would be the quantity of water impounded between the canal level and the top of the dam, which, he says, would be 40,000 or 50,000 acre feet at most.

From the nature of the foundation (glacial gravel and shingle), he doubts the possibility of raising the dam any higher. He says, indeed, that if the diversion dam proves sufficiently stable they will increase its height little by little, but that he cannot enter into any engagement at the present time to do so.

The diversion dam as proposed with the limited storage incidental to it will not be sufficient (with the canal carrying 850 cubic feet per second, which they propose to build) to take care of their half of the river. This statement accords with my own

9-10 EDWARD VII., A. 1910

knowledge of the difficulty there would be in taking a low level canal down the St. Mary's valley, also with George Anderson's report in regard to the difficulty as to foundations.

He says further that he has talked with the Canadian Pacific Railway engineers, who propose to build a greatly enlarged canal along the basin of Milk river ridge. This canal you will find on the blue print showing existing and proposed irrigation canals. It follows the yellow line south of the existing Canadian canal (red line) from near Lumpy Butte through Milk river reservoir, and thence southeasterly to the existing Milk river canal (red line). Numerous reservoir sites are available on this line, and it may be that money would be better spent in developing storage there than in the channel of St. Mary's river. In view of the statement made as to the impracticability of the storage dam at St. Mary's lakes, I do not see what I am able to say in reply. Mr. Newell will prepare a written statement which will be forwarded to Ottawa, so that you can judge of it yourself.

Mr. Bryce has asked me to join with Mr. Tiltmann in preparing a draft of description of the boundary line in the lower Passamaquoddy bay. This will take a day or two. If it is not necessary for me to return immediately on account of the other matter, I should like to stay to do this, as it will be more convenient for me to attend to it now than to return to Washington for the purpose later on.

Yours sincerely,

(Sgd.) W. F. KING.

From Rt. Hon. James Bryce to Lord Grey.

BRITISH EMBASSY, Washington, February 10, 1910.

MY LORD,—I have the honour to enclose herewith a copy of a letter which has just been received from the Secretary of State in relation to the subject of the storage of water in the dam proposed to be constructed by the United States government in the St. Mary's river, and in reply to the letter which I addressed to the Secretary of State on January the 25th, enclosing a memorandum which embodied the substance of the letter from the Hon. Mr. Pugsley to Sir W. Laurier which you sent me. Mr. Knox's letter enclosed one from the United States Secretary of the Interior. These two letters set out the reasons, based on the physical conditions and nature of the ground at St. Mary's lake, which make it, in the opinion of the United States government engineers, impossible to undertake to store for Canada her share of the waters of the St. Mary's river. They conceive indeed that the dam cannot, so far as at present can be foreseen, be with safety made large enough to store all or nearly all the United States share of the St. Mary's river water, so that this dam will, in fact, be not so much a reservoir as a means for enabling the United States to divert, as provided for in the treaty, its share of the St. Mary's river water into the Milk river, the water of which is to be available for both countries in the manner prescribed by the treaty.

I have discussed this matter at great length not only with the officials of the State Department, but also with Mr. Newell, the head of the United States Reclamation Service, and have had the valuable assistance in doing so of Doctor King, who has also conferred with Mr. Newell on several occasions and has examined the subject with his accustomed thoroughness.

I have, &c.,

(Sgd.) JAMES BRYCE.

SESSIONAL PAPER No. 19e

DEPARTMENT OF STATE.

WASHINGTON, Jan. 10, 1910

Rt. Hon. JAMES BRYCE.

DEAR MR. BRYCE,—Referring to your note of the 25th ultimo and the memorandum inclosed therewith relative to the Boundary Waterways Treaty of January 11, 1909, which is now awaiting ratification, there seems to have been some misunderstanding on the part of the Canadian government as to the purposes for which the United States intends to construct the dam at the outlet of St. Mary's lake and the canal between that lake and Milk river in northern Montana in connection with the use of the waters apportioned between the United States and Canada under the provision of Article VI. of the treaty. An examination of that article will show that it provides merely for an equal division between the two countries of the waters of the St. Mary's and Milk rivers with certain prior appropriations of the natural flow apportioned to each side. There is no requirement that the United States shall store any waters for the use of Canada, in fact, no mention is made of the storage of waters, and the waters which the United States proposes to store are to be taken from its half share of the natural flow, and are intended for use on its own side of the boundary. The proposed storage of waters, therefore, by the United States will in no way diminish or interfere with the half share of the natural flow to which Canada is entitled under the treaty.

In order to ascertain, however, if it would be possible to propose some arrangement, independently of the present treaty, to store for Canada some part of the Canadian share of the natural flow of these waters in compliance with the wish expressed by the Canadian government, that question has been taken up with the United States Reclamation Service, and in response to my inquiry, I have to-day received from the Secretary of the Interior an expression of the views of that department on the subject, a copy of which I inclose, showing that on account of the physical conditions where such storage works would have to be located, it would be unwise to undertake, for the present at least, to provide for the storage of any waters in excess of those required for use in the United States. It appears, as a matter of fact, that the United States will be unable to store anything like its own share of the waters of the St. Mary's river. It further appears from the statement referred to that on the Canadian side of the boundary the natural conditions are more favourable for the storage of Canada's share of the water at less cost and with greater assurance of permanence and safety than at the outlet of St. Mary's lake where the works to be constructed by the United States must be located.

I inclose for your convenience a copy of the map prepared by the United States Reclamation Service, showing the region referred to.

I am, &c.,

(Sgd.) P. C. KNOX.

ENCLOSURES.—Letters from Secretary of Interior, February 9 and 10, 1910, with map.

DEPARTMENT OF THE INTERIOR,

WASHINGTON, February 9, 1910.

The Honourable
The Secretary of State.

SIR,—With reference to the inquiry made informally by your department as to whether it will be practicable to provide storage in St. Mary's lake, Montana, for water to be used in Canada, it is necessary to state that this inquiry must be answered in the negative. The engineers of the Reclamation Service show that the physical conditions are such that it is impracticable to provide storage for an amount

9-10 EDWARD VII., A. 1910

of water greater than that which, under the terms of the treaty, is subject to storage by the United States. It may ultimately prove to be practical to hold more water than now seems feasible, but in view of the uncertainty, it would be unwise to plan to store in the United States a portion of the water which is ultimately to go to Canada.

Investigation made by the Reclamation Service at the outlet of St. Mary's lake in the United States show that the foundations of any dam must rest upon gravels washed into St. Mary valley by Swift Current creek. The construction of a high dam at present is unwise, or until a low structure has been built and thoroughly tested by years of use. It is proposed to build an earthen dam which will increase the available depth in lower St. Mary's lake by about 30 feet, and turn the water into a tunnel at the head of the canal now being built to carry water from St. Mary's lake to the north fork of Milk river.

In this connection emphasis should be laid on the fact that the dam at the outlet of the St. Mary's lake is primarily a diversion dam, and that its purpose, first, is to raise the water of the lake to give it sufficient depth and volume to flow into the tunnel at the head of the canal, the opening to which may be some distance above the river bed, final conclusion not yet being made as to the particular plan to be adopted as an open cut may be substituted for a tunnel when construction is begun.

Without such a dam raising and diverting water, it would not be practicable to create sufficient head to force water into the canal, the height of which is governed by the nature of the ground and the altitude of the pass which must be surmounted in the route between the St. Mary's drainage and the Milk river drainage.

It may be found, after the dam has been completed and thoroughly tested by the lapse of years, that larger storage can be provided by raising the dam or by building additional dams. The water held in the lower portion of the lake below the level which is necessary to be maintained to fill the tunnel cannot be considered as available and remains inert in the lake bottom and cannot be drawn out, being replaced in course of time by the silt which may accumulate in the dead water.

The natural conditions north of the International boundary in Canada are more favourable for water storage at reduced cost and with great assurance of permanence and safety of the structure

Very respectfully,

(Sgd.) R. A. BALLINGER,
Secretary.

DEPARTMENT OF THE INTERIOR,
WASHINGTON, Feb. 10. 1910.

The Honourable

The Secretary of State.

SIR,—Supplementing the letter of yesterday from the department with reference to the proposed St. Mary's lake dam and canal in northern Montana, it is proper to add that the engineers of the Reclamation Service are of the opinion that on account of the physical conditions where the proposed works must be constructed, the amount of water which can be stored, for the present at least, will probably not exceed one-half of the share of the natural flow to which the United States is entitled under the terms of the pending treaty.

Very respectfully,

(Sgd.) R. A. BALLINGER,
Secretary.

SESSIONAL PAPER No. 19e

MEMORANDUM UPON MR. GEO. G. ANDERSON'S REPORT, DATED 18TH SEPTEMBER, 1909, UPON ARTICLE 6 OF THE INTERNATIONAL WATERWAYS TREATY.

In the bound copies which Mr. Anderson has furnished, the report proper, with tables, occupies 56 pages. There follow appendixes, amongst which is a copy of his report to me, of April 22, 1908. In the following discussions this will be referred to as the 'former report.' It should be noted that the two reports are paged independently.

It will be convenient to discuss the report closely, adhering to the order of the objections (a) to (f) stated by Mr. Anderson on the first page.

Objection (a).

That the equal apportionment does not take cognizance of the relative areas which it is possible to reclaim in the two countries.

The relative area is put by Mr. Anderson (Report, p. 15) at—

United States.	200,000 acres.
Canada.	630,000 acres.

On this principle the United States should get only 20-83, or less than one-fourth of the whole supply.

Such a principle of division might well be adopted if all the territory were within one country. This, however, is not the case, and there is no rule of international law which can be appealed to in support of the principle.

On the other hand, international law rather tends to support the claim of the United States to the right to deal at will with rivers within their own territory, without servitude upon the waters in favour of persons living outside of their territory.

The extent of the obligation which may rest upon the United States in regard to the existing works on the Canadian side will be further considered when dealing with Mr. Anderson's objection (b). In this place it seems sufficient to point out that existing rights and prospective future extension of them are different things. The United States may, not unreasonably, decline to extend to the latter, to the detriment of their own development, the recognition which they may give to the former.

Hence, both principles, of legal rule and of moral obligation, failing, it is impossible to press an argument for division of water pro rata of lands available for irrigation. The principle of division must be arrived at by agreement.

In negotiating an agreement, consideration had to be given to the fact that the sources of both the rivers are in the United States, and that it is physically possible to divert the greater part of the waters, if not all, within the United States and without touching Canadian territory.

Canada is powerless to prevent this, or to retaliate, for the channel of the Milk river may be dispensed with by the United States for the transport of the water. Though the alternative route would be costly, it has not been denied that it is an engineering possibility.

The cost of this alternative diversion (*via* the Marias river) was discussed by Mr. Anderson in his former report. He puts the cost (p. 22) at \$3,000,000 to \$5,000,000. At the higher figure, adding \$1,000,000 for laterals, &c., and computing on the basis of 200,000 acres of irrigable land, this would amount to \$30 per acre, which, Mr. Anderson argues, would be a prohibitive charge upon the land under the provisions of the United States Reclamation Act which requires that the cost of irrigation shall be a charge upon the land, to be repaid within a certain length of time.

9-10 EDWARD VII., A. 1910

However, elsewhere (former report, page 56) he shows the value of irrigated lands in various parts of Montana. From this it appears that the value of irrigated land on the lower Milk river is \$40 per acre. He puts the value of the water right at half the value of the land, *i.e.*, in this case at \$20.

This would justify the expenditure of \$4,000,000 to irrigate 200,000 acres.

However, if the water right at \$20 is half the value of the land, the value of the land without water would be \$20, which seems a high price* for unwatered land in that section, reputed to be much more arid than Southern Alberta.

The inference is that the land could stand a higher charge than \$20 an acre, though possibly it might not be practicable in the administration of the Reclamation Act to collect a heavier charge from the private owner.

But in view of the fact that the value of land is continually increasing, it might be considered by the United States to be to their advantage to modify their reclamation policy, and to pay a part of the cost out of the treasury.

Or, if not bound down by a treaty to deliver a certain quantity of water to Canada, the work might be done at any future time. When lands in the district mentioned come to be worth \$60 per acre it will pay commercially to expend \$6,000,000 to reclaim 200,000 acres.

Further, it seems that the Marias diversion canal would pass through or near the eastern section of the Blackfoot reserve where it is said there are 100,000 acres irrigable, and this land could probably be served by the same canal at little additional cost.

Then, instead of 200,000 acres, we must reckon upon 300,000, which at \$20 per acre would justify the expenditure at the present time of \$6,000,000.

At two acre feet to the acre, this irrigation would make a draft upon St. Mary's river of 600,000 acre feet per annum, the average total annual flow being 769,000. It would require, however, a larger canal than that estimated for to carry this amount of water during the open season. The canal carrying 850 cubic feet per second, upon which Mr. Anderson's figures are based, would carry in nine months' flow about two-thirds of this only. Nevertheless, if the canal were once built, there is no doubt that it would later on be enlarged to a capacity to carry all the water that would be required.

These considerations show that an agreement for the apportionment of the water was advisable from Canada's standpoint as well as from that of the United States.

In the present arrangement the share of each is declared to be one-half. Equal division is, of course, in accordance with the general principles of the Waterways treaty, and is in a sense a natural principle having regard to the equality of nations.

Objection (b).

That the equal apportionment does not recognize, as a vested right, the prior appropriations made by Canada on the St. Mary river.

The Alberta Railway and Irrigation Company's authorization of May 3, 1899, grants it 500 second feet of the low flow, and 2,000 second feet of the high or flood flow of St. Mary's river, with fifteen years from October 23, 1902, in which to complete the work.

Their canal, originally built to carry 400 second feet, was enlarged in 1907 to a capacity of 800 second feet.

On page 19 and following pages of his report, Mr. Anderson discusses the laws and court decisions relating to priority of appropriations in the western states.

The requirements to secure and to retain priority of a water right are, first, due notice of appropriation, and, second, due diligence thereafter in applying the water

* School lands near Lethbridge brought an average of \$11.50 per acre at public auction last July.

SESSIONAL PAPER No. 19e

to beneficial use. In the present case the first requirement has been fulfilled by the authorization of 1899, and Mr. Anderson states that the development since the company's canal system amounts to 'due diligence,' as the term is understood in the arid states.

As a consequence of this doctrine, any diversion of water from the river above the company's works, except of the surplus over the amount of their appropriation would be a violation of their rights.

It will be seen from the table on page 3, that 2,000 feet per second during the seven months of the irrigation season, from April to October inclusive, is in excess of the supply in every month except June and July of the average year, leaving in June 179 $\frac{1}{2}$ second feet and in July 301 second feet. That is for practical purposes the company's authorization calls for the whole river, and no use could be made of the water by the United States.

The difficulty of applying the doctrine of appropriation rigidly under such conditions is evident. Mr. Anderson, on this point, quotes (page 20) from a letter written by the late John Hay, Secretary of State of the United States, to the British Ambassador, dated February 19, 1903 (Mr. Anderson wrongly gives the date as 29th December, 1902).

In this letter Mr. Hay said: 'It is proposed to deal with this matter in strict conformity with the laws concerning the right to the use of water as recognized by the courts of the arid region both on this side of the international boundary and on the other. The principle may be stated in the language of section 8 of the Reclamation Act of June 17, 1902 (32 Stat. 388).

"That the right to use of water shall be appurtenant to the lands irrigated and beneficial use shall be the basis, the measure and limit of the right."

This Mr. Anderson puts forward as a definite and official promise by which the United States should be bound to respect the appropriation of the company. The argument is as follows. Beneficial use, technically, under court decisions means not only the actual application of water to the land, but also the intent to do so, as shown by notice of appropriation and 'due diligence' in construction of works for the application of the water to the land. Hence, Mr. Hay in effect recognizes the right of the company to 2,000 second feet for St. Mary's river.

I do not think there is much force in this argument. The United States would probably say in reply that, if they are bound by Mr. Hay's words, they are bound only in the sense in which he personally intended them.

That by 'beneficial use' he meant merely actual application to land appears by his reference in the same letter to a careful investigation of the river made by the engineer in charge of the work in Montana with a view to determining the amount of the water to which claim might properly be advanced in Canada.

If he had meant 'beneficial use' on its wide technical sense, he would not have referred to a local examination as determining the rights of appropriation. He would have had only to consult the terms of appropriation, made four years before, and of which he had been informed, by which the company, under the fictions of the law, would possess the whole river. This he certainly did not intend to promise.

Construing the promise as applying to the capacity of the canal at that date, 400 second feet, this quantity is secured to the company by the provision of priority during the irrigation season to the extent of 500 second feet or so much of that amount as constitutes three-fourths of the flow. This gives more than 400 feet in every month of irrigation season during the average year, except occasionally during extreme low water. Deprived of the benefit of the doctrine by which 'beneficial use' is construed to cover prospective, as well as actual, takings, we have to revert to general principles, according to which, as has been shown, the amount of water to be received by Canada must be settled by agreement.

If the amount of water coming to Canada is cut down by one-half, the company must necessarily suffer a corresponding diminution of supply. As the whole supply approximates 2,000 second feet, their share would be 1,000.

Taking the table of average flow on page 3, we find that half the river during the irrigation season (with the provision respecting the priority to 500 feet) gives:

In April.	500	second	feet.
May.	899	"	"
June.	1,932	"	"
July.	1,150	"	"
August.	520	"	"
September.	500	"	"
October.	443	"	"

Subject to a charge amount to 469 second feet for one month on account of the months during which Canada receives more than half of the river.

On page 4 Mr. Anderson says that in practical operation the company rarely flow water through their canal system before 1st May. They require full volume during May, June and July, their requirements decreasing to 50 per cent in August and to 20 per cent in the other months of the season (of irrigation).

Hence, on a basis of a 1,000 second feet they would have from half the river an ample supply in June and July. In August, requiring 500 (50 per cent) they get 520; in September and October, requiring 200, they get 500 and 443 respectively. The unused April supply could be stored to make up the deficiency in May.

Thus the requirements of a 1,000 second feet canal system would be very fully supplied. In fact, this is an under-statement. With the assistance of storage a supply would be afforded on a basis of almost 1,300 second feet. It must be remembered, though, that the figures are an average of different years, and in some years the supply would be much less than the average.

There is also the right to use half of the Milk river waters. Hitherto the company has not used these waters at all. If, as Mr. Anderson suggests, the United States priority there results in giving Canada little of that water, then there is so much the more which may be taken from St. Mary river.

The company therefore still has room for considerable further development, and is probably safe for five years, which is the term of the treaty.

In the above it has been assumed that the 500 second feet (or three-fourths of the natural flow), which Canada is to receive in any event, is to form part of Canada's half share in St. Mary's river, and similarly with 500 feet reserved to the United States on Milk river. This is the way in which Mr. Anderson understands the reservation.

However, the words of the treaty are 'prior appropriation,' and these words taken alone strictly mean, I believe an absolute setting aside of that amount. If there is nothing in the other words of the treaty to modify the effect of these, Canada will get 500 second feet and half of all the rest of the water of St. Mary's river.

Since Milk river falls below the limit during more months in the year than the St. Mary does, such a construction would give Canada more than half of the combined flow of the two rivers.

Objection (c).

That provision is not made for a periodic division of the waters. On page 31 Mr. Anderson states as an objection to the treaty, that it provides for a division of the diurnal rather than the periodic flows.

The treaty, however, seems to contemplate some kind of periodic division, for it is provided that, in making the apportionment, more than half may be taken from

SESSIONAL PAPER No. 19e

one river and less than half from the other. This seems to call for the keeping of some kind of account of water supplied, which would have to be balanced periodically.

Also the measurement and apportionment of the water to be used by either country shall 'from time to time' be made jointly, &c

The treaty leaves the determination of the 'times' to the Joint Commission, whose duty clearly will be, in carrying out the intention of the treaty, to bear in mind the 'more beneficial use of each' country.

It is well known that the requirements of different parts of the country as regards water supply are different, as to times as well as quantities, and they will vary in different seasons. It would be impossible to lay down rules beforehand for distribution, with a certainty that they would meet all cases. The needs must be determined by experience.

Mr. Anderson's objection is in part based upon an opinion that the commission may take too long to decide questions which arise and a fear that without an 'oversman' they may decide on national lines.

I suppose, as a matter of fact, the apportionment will be carried on by the irrigation officers, under general rules laid down by the commission, which general rules may be varied as the need arises.

There is no reason to suppose that a body such as the International Joint Commission would not endeavour to carry out the treaty impartially and in accord with its true intent.

Of course it would be possible for them to split on national lines, but so might any body of men. An 'oversman' would of course prevent a deadlock, but where is an impartial oversman to be procured?

Mr. Anderson suggests (page 33) that the commission make the winter flow of St. Mary river part of the share of Canada, allowing the United States to take its half of the whole annual flow during the summer months. Since Canada cannot utilize the winter flow, this would be a great injustice.

It is impossible to believe that the commission would sanction such an unfair division. If neither party uses the winter flow, the summer flow must be divided equally. This seems axiomatic.

In this connection Mr. Anderson points out that there is no provision in the treaty for utilization of the winter flow by storage (by the United States) in St. Mary's lakes.

With proper capacity the whole winter flow might be held. If the United States do this, the amount ought to stand as part of their half of the river, thus giving Canada a further supply during the summer equal to one-half of the winter storage.

Mr. Anderson argues that the United States will not do this, because they can get all the water they need by direct flow from the river during the summer months.

This point will be discussed further on.

Objection (d.)

That the apportionment does not provide for Canada a fair equivalent for the use of Milk river channel for conveyance of water for irrigation.

Mr. Anderson's argument on this point, from page 36 to page 51, reads to me more like an argument on behalf of the United States than a proof that Canada is entitled to 'better terms.'

His argument is as follows:—

Admitting that the United States has sovereign rights over the waters of streams occurring in its territory.

Canada's half share of both rivers is 500,597 feet.

'The United States, however, would not "give up" all of that as compensation for the use of the channel.' He shows that on the basis of the admitted prior right

9-10 EDWARD VII., A. 1910

to 500 second feet during the irrigation season, and on the basis of a certain computation as to Milk river, the United States must allow Canada as a right.

From St. Mary river.	214,000	acre feet.
" Milk river.	66,105	" "
Total.	280,105	" "
Canada's half share being.	500,597	acre foot.
Deducting acknowledged right.	280,105	" "

The United States gives Canada. 220,492

This is valued (page 39) at \$10 per acre foot.

Therefore, Canada is given as compensation for the use of Milk river channel \$2,204,920.

'This represents a saving to the United States over the cost of construction of any other route of, at least, one million dollars.' (Page 39.)

If this were all that could be said, the objection might well be dropped. Canada is the gainer by the liberality of the United States in paying \$2,204,920 in order to save \$1,000,000.

A better computation, on the same basis, would be:—

The priority of the Canadian canal should be recognized up to its present capacity, 800 second feet. The tables of average flow show that during the irrigation season this canal would take from St. Mary's river 314,699 acre feet. To this add the amount estimated by Mr. Anderson from Milk river. 66,105 " "

Total.	380,704	" "
Half the combined flow being.	500,597	" "

Canada is 'given' the difficulties.	119,893	" "
Which is worth.	\$1,198,930	

The alternative route by Mr. Anderson's figures would cost the United States an additional expense of much more than \$1,000,000, namely, the difference between \$1,933,000 and 'between 3 and 5 millions.'

However, taking an equal division as the basal rule, Canada receives nothing as compensation for the use of Milk river channel, except the establishment of that rule and freedom from future disturbance.

Objection (e.)

That the treaty fails to provide any compensation to Canada for the maintenance of the channel of Milk river, or any clearly defined and adequate means of redress in the event of injuries that will inevitably result from its use by the United States in the manner provided.

As to the first part of this objection, Mr. Anderson speaks only of the erosion of the river bed, caused by the greater flow of water, necessitating the erection of highway bridges to replace the existing fords.

This point was considered during the negotiations, but dropped as relatively unimportant. Private damage from the increased flow, such as cutting asunder a farm or ranch, would come under the provisions of Article 2 of the treaty. As to public damage, when the country is settled, the fords will no longer be sufficient for the high roads, and bridges will have to be built under any circumstances.

As to damages for direct injury from the flow of the stream, a provision providing for compensation was proposed, but rejected by the United States negotiators, on the ground that such a provision in the treaty might make them subject to ex-

SESSIONAL PAPER No. 19e

cessive damage claims. The assurance was given that the United States government would deal fairly with those suffering damage.

At the foot of page 42, Mr. Anderson infers from the terms of Article 2 that if the Canadian government permitted the diversion from Milk river or any of its tributaries, of water naturally occurring in Canada, so as to conflict with the rights of a prior appropriator in the United States, the latter would be entitled to ask the Canadian courts for injunctive relief and damages for the actual injury.

Under the treaty the permission would not be given by the Canadian government, but by the commission. Clause 2 would hardly apply to their operations under clause 6. If the commission do wrong, the remedy must be sought elsewhere.

He infers also that clause 2 might have the effect of preventing the diversion from Milk river of any part of the water turned by the United States into that river from the St. Mary river. This is also in the hands of the commission to authorize or forbid.

Objection (f.)

The composition of the International Joint Commission is defective and there is lack of provision of methods for its guidance and operation.

The commission will consist of three representatives of each country.

Mr. Anderson says there ought to be an 'oversman.' He says that in the event of an even division of the commission delay would result, and this might cause serious loss. I have dealt with this objection elsewhere.

As to lack of provision of methods for its guidance and operations, Mr. Anderson mentions the question of diurnal or periodic division. This also I have already discussed.

GENERAL REMARKS.

The point in Mr. Anderson's report which, in my opinion, calls for the most serious consideration is the possibility which he calls attention to that the United States may not provide for storage of St. Mary's waters.

They will be able, he thinks, to get all the water they need during the summer by direct flow and without exceeding their share. Consequently the winter flow will not be utilized, because Canada cannot store it, and that amount of water will be wasted.

Records of the flow of St. Mary's river have been kept by the United States Reclamation Service since the fall of 1902. The point of measurement is near the intake of the Canadian canal, a few miles north of the boundary line.

On page 54 of Mr. Anderson's report is a table giving the flow for each month from September, 1902, to December, 1908, inclusive.

From this table, the average yearly flow of the river during that period is 769,374 feet. The average 'winter' flow, that is, the average flow of the five months, November to March inclusive, is 100,643 acre feet.

From the corresponding table for Milk river the total amount of flow of that river averages 231,000 acre feet.

The total flow of both rivers together is, therefore, 1,000,374 acre feet, and the share of each country 500,187 acre feet.

From the table on page 56 it appears that the United States would, under the terms of the treaty, get from Milk river 192,051 acre feet.

To make up their 500,187 acre feet they would therefore require 308,813 acre feet from St. Mary's river.

A canal carrying 850 cubic feet (the capacity contemplated by the United States at present) per second and running for six months would carry this water.

9-10 EDWARD VII., A. 1910

Or, cutting out the winter flow, which averages on St. Mary's river, 100,643 acre feet, and in Milk river, 51,695 acre feet; total, 152,338 acre feet. The whole summer supply of both rivers, 848,036 feet, of which each country's share will be 424,018 acre feet.

The United States would take their share thus: From Milk river, 140,366 acre feet; from St. Mary's, 283,652 acre feet; total, 424,018 acre feet.

The 850 second feet canal would carry the 283,652 acre feet in five months' flow.

The total acreage irrigable by the United States on the lower Milk river is stated by Mr. Anderson to be 200,000 acres, requiring two feet per acre, or 400,000 acre feet altogether.

Therefore, it will not be necessary for the United States, Mr. Anderson says, to provide any storage on St. Mary's river.

The flaw in this argument is in the fact that Mr. Anderson deals with average flows. The flow of St. Mary's river actually varies very greatly in different years.

Thus, from the table on page 54 it will be seen that the average yearly flow varies from 514,100 to 1,107,294 acre feet.

The general average winter flow is 100,643. The winter flow in 1902-3 was 269,000 acre feet. In 1904-5 the winter flow was 37,000 acre feet.

The following abstract of Mr. Anderson's table will give a clearer idea.

Year.	Summer Flow.	Winter Flow.	Total.
1903.	867,223	240,071	1,107,294
1904.	555,920	54,489	610,409
1905.	461,401	52,699	514,100
1906.	512,200	106,720	619,000
1907.	781,800	53,690	835,490
1908.	846,300	57,610	903,910
Averages.	670,821	94,213	765,035

My average in the last column differs slightly from Mr. Anderson's, because he includes the last four months of 1902, which I have omitted. Including the latter months of 1902, the average winter flow is 100,643.

It is at once evident that the average has been greatly increased by the excessive flows of two years 1903 and 1908.

Referring to the table of monthly flows, we see that the excess in these years is largely due to the flow in June.

In June, 1903, the flow was 309,421 acre feet, and in June, 1908, 380,000 (estimated).

This last amount is almost half of the yearly average. Also in June, 1907, the flow was large, 253,000.

The flow during these three Junes were:—

1903.	309,421 acre feet	= 5157 cubic feet per second.
1907.	253,000 "	= 4217 " "
1908.	380,000 "	= 6333 " "

However, the flow of the river was not uniform during these months, and the flow at times was very much greater than the figures show. Thus in the early part of June, 1908, the river, at a rough estimate, was carrying 20,000 feet per second during several days. The river was absolutely beyond control.

It would hardly be possible by any system of storage or diversion canals to utilize to the full extent these large flows.

Probably the amount utilized should not be estimated at more than the average flow of June, 1907, or, say, 4,000 cubic feet per second.

SESSIONAL PAPER No. 19e

Making a deduction for the water thus lost, the available summer flow of St. Mary's river should be put at not exceeding 600,000 feet.

The annual average for Milk river is put at 231,820. Of this 51,695 is the winter flow, equivalent to about 170 feet per second during the five months. The United States would get this, for they will have storage reservoirs on the lower Milk river.

Canada's share of Milk river Mr. Anderson computes at 38,949 acre feet.

The summer flow of St. Mary's being. 600,000 acre feet.

The total flow of Milk river. 231,000 " "

We have altogether. 831,820 " "

Of which one-half is. 415,910

In the average year, therefore, the United States would have their 400,000 acre feet and 15,910 over. No account has been taken of evaporation, which will considerably reduce the amount, as the water has to be carried a long distance.

Possibly the winter flow of Milk river should not be included. The flow is small and the river sluggish. It would be difficult to get the water to the reservoirs during frost.

If we omit this winter water, the flow of Milk river would be 180,125

And of St. Mary's as before. 600,000

780,125

Half of which is. 390,062
which is not sufficient for the purposes of the United States.

The foregoing is the condition during a year of average water. It is necessary also to consider a low water year.

In 1905 the summer flow of St. Mary's river was. 461,401 acre feet.

The whole flow of Milk river was about. 20,000 " "

Total. 481,401

Half of which is. 240,700

Or 159,300, or about 40 per cent short of the requirements of the United States.

Hence it is evident that storage will be necessary of the surplus of a flood year to provide for years of scarcity.

Mr. Anderson, however, points out that their storage may be on the lower Milk river instead of on the St. Mary's. Thereby the winter water of the latter river would be allowed to run to waste. Canada's half of it, varying from 18,000 to 120,000 acre feet, would be lost to her.

Against this is the fact that the United States have been intending to build a canal of 850 second feet capacity only. They will not be able to fill this at all times, as they are subject to the right of Canada to half the river (or more when the Milk river is taken into account also), or to three-quarters of the river when that part falls to 500 second feet or less.

A flow of 850 second feet or so much of such amount as constitutes one-half of the flow of the river, to be reduced when the river falls to 667 feet or lower, to one-fourth of the flow, would give them in the average season about 229,000 acre feet.

This approximately the amount which they should get from St. Mary's river during the average season. In years of high water they should get more in this way, but not more in proportion to the increased flow, because there is always an excess in June and they could not take more than 850 feet at any time with a canal of that capacity.

In low years the quantity would be much less. The conclusion is that to provide for low years, it would be necessary for them either to enlarge the canal beyond 850 second feet, so as to take more in May, June and July, or to build the storage dam at St. Mary's lakes.

9-10 EDWARD VII., A. 1910

This dam would cost less than enlarging the canal, and would give them at the same time better control of the water. It is probable therefore that the dam will be built.

A reservoir of 250,000 acre feet capacity has been spoken of, and also one of 150,000.

The smaller one would hold all the winter water except in usual years. This water would be run off as early in the spring as possible, so as to empty the dam before the mountain water came down. While this water was coming down, the diversion canal could be run at its full capacity, and the dam closed at the same time.

With a canal carrying 850 second feet on the United States side and the present Canadian canal of 800, and a reservoir of 150,000 acre feet capacity, use could be made as follows (in the average year).

Suppose the canals to be opened on April 1, the reservoir then containing 100,000 acre feet of winter water, the American canal could be run at its full capacity until the end of October.

The Canadian canal could get its full supply during May, June, July and August and the whole of the river during April, September and October.

Approximately 41,000 acre feet would be lost in June, and 40,000 in July, while 8,500 would remain in the reservoir on October 31. The United States would thus get a total of 363,000 and Canada 314,699.

As the share of Canada from both rivers is 500,597 acre feet, of which 39,949 (Anderson, page 56) comes from Milk river, and 461,648 from St. Mary's river, the United States would have diverted more than its share by 146,959 acre feet, which, however, must be reduced by 40,500 acre feet, being one-half of the waste in June and July, leaving about 106,500. This might be delivered to Canada on Milk river.

Or, again, supposing the United States canal to remain at 850 second feet, but the Canadian canal to be enlarged to 950.

Then starting as before with 100,000 acre feet in the reservoir, the United States canal might run to its full capacity throughout the season (except a shortage of about 800 acre feet in October). Canada could still take all the river in April, September and October, and fill her canal in May, June, July and August.

In this way Canada would get a direct supply of 351,599 and the United States 362,976 acre feet. The loss in June and July would aggregate 54,000 acre feet. The United States would then owe Canada 85,000 acre feet, to be repaid at Milk river.

Thus, a reservoir of 150,000 acre feet capacity would save practically all the water of an average year.

It would probably pay Canada better if an agreement could be made to have part of her share delivered at Milk river than to take it all from the St. Mary's by enlarging the present canal.

W. F. KING.

March 1, 1910.

Honourable FRANK OLIVER,
Minister of the Interior,
City.

MEMORANDUM.

With reference to the note from the United States State Department, transmitted by Mr. Bryce, the principal point is the statement that the dam at the outlet of St. Mary's lake is to be primarily a diversion dam, for the purpose of creating sufficient head to force water into the canal, and that storage of any large quantity of water will not be attempted until experience has proved the stability of the foundations.

SESSIONAL PAPER No. 19e

It is stated that the intake of the canal may be some distance above the river bed, but this distance is not definitely given; thirty feet is mentioned but this seems to be a tentative estimate subject to modification from the results of further surveys. After leaving the river the diversion canal, as first located, would follow a side-hill for a considerable distance, presenting serious engineering difficulties, both in construction and in maintenance. It seems that to secure a better location they will have to go to a much higher level than the river bed.

In such case, the water below the canal level will be dead water, which cannot be let out of the reservoir, and consequently will not count for storage.

Thus any estimates as to what the United States could do to assist Canadian interests with a storage of 150,000 acre feet behind a dam 30 feet above river level, or 250,000 acre feet with a dam 50 feet high, require modification. The amount of water held below the canal level must be deducted from the total storage.

They say that it is impracticable, (with present knowledge of the physical conditions) to plan for storage of more water than that which, under the terms of the treaty, is subject to storage by the United States.

This is certainly true, if it is necessary to put the canal intake as much as 30 feet above the river level. Between it and the top of a 50 feet dam there would be a storage for about 100,000 acre feet (See reports of the Reclamation Service). This would be insufficient for the requirements of the United States, while a dam of that height, involving a pressure at the base of over 20 pounds per square inch, would be of doubtful stability on the gravel foundation.

It is suggested in the note that storage on the Canadian side of the boundary could be secured at less cost and with greater assurance of permanence than at the outlet of St. Mary's lake. This is corroborated by Mr. J. S. Dennis, of the Canadian Pacific Railway, who has a thorough knowledge of the engineering questions involved. While in the government service above fifteen years ago, he surveyed the whole of that region for the very purpose of ascertaining the possibilities of irrigation by water diverted from St. Mary's river.

His view is that by utilizing the storage facilities of the northern slope of Milk river ridge, Canada can store all her share of the water, and that the storage in the basin of St. Mary's lake would be of little or no service to her.

Respectfully submitted,

(Sgd.) W. F. KING,
Chief Astronomer.

CANADIAN PACIFIC RAILWAY COMPANY.

MONTREAL, March 4, 1910.

DEAR MR. PUGSLEY.—Mr. J. S. Dennis, who is our Superintendent of Irrigation, wrote me from Ottawa, February 16, as follows:—

With reference to the interview had this morning with the Honourable Mr. Pugsley, and Dr. King, Boundary Commissioner, regarding the matter of division of international waters, and to my telephonic communication to you through Mr. Beatty, I send you herewith a copy of Article 6 of the treaty, together with map of Alberta and a portion of Montana.

As you are aware, I know the local situation very thoroughly, not only on our own side of the line, but also on the other, and after very full and careful consideration of the subject, I am quite decided that the division of the waters of the St. Mary and Milk rivers, provided for by Article 6 of the treaty is perfectly fair and amply protects Canadian interests, as a whole, and the Alberta Railway and Irrigation Company, particularly and that we are in a position to store at suitable points in the St. Mary river ridge

9-10 EDWARD VII., A. 1910

such portion of the high water and flood and flood discharge of the St. Mary and Milk rivers, as must be passed to us by the American authorities under the provisions of section 6 of the treaty.

There is no question whatever, in my mind, that the treaty provides for a division of the waters of these two streams on a thoroughly equitable basis, and amply protects our interests in as far as they are concerned with the Alberta Railway and Irrigation Company.

Mr. Pugsley asked that I would write him a letter to that effect, but I said that I would, of course, desire to consult you before doing so. I am now advising him that he will hear from you direct with reference to the matter, or through Mr. Creelman.

It is probable that Mr. Dennis intended to refer to the Milk river ridge instead of the St. Mary ridge, but I am giving the exact language of his letter.

Personally, I am not sufficiently familiar with the situation, nor have I the requisite technical knowledge, to confirm Mr. Dennis' report, but I would accept it without hesitation if it were made with direct reference to any irrigation work or water supply in which this company was interested.

Yours very truly,

(Sgd.) T. G. SHAUGHNESSY.
President.

Honourable WM. PUGSLEY,
Minister of Public Works,
Ottawa.

March 12, 1910.

MEMORANDUM.

Referring to the statement by Mr. Dennis, quoted in Sir Thos. Shaughnessy's letter of the 4th inst., that Canada is in a position to store her share of the high water and flood discharge of St. Mary river under the proposed Waterways Treaty, I may say that the principal reservoir sites in Canada which may be connected with the St. Mary and Milk river irrigation systems are as follows:—

	Acre feet.
Mary lake reservoir, capacity.....	21,700
Taylorville " "	43,800
Lunpy Butte " "	12,500
Chin Coulee " "	50,000
Shanks lake " "	109,500
Milk river " "	29,000
Brunton " "	67,000
Raymond " "	7,500
Verdigris " "	150,000
Crown Indian " "	100,000
	591,000

Nearly all of these capacities are calculated from contour surveys, the others by careful estimation on less complete surveys.

The average total annual flow of St. Mary river, from observations from 1902 to 1908, is put at 769,374 acre feet; that of Milk river at 231,800 acre feet, or a total, from both rivers, of about 1,000,000 acre feet, Canada's half of which would be 500,000 acre feet, or less than the storage capacity above shown.

SESSIONAL PAPER No. 19c

For the purpose of considering St. Mary river alone, we must deduct from the above storage areas that of Shanks lake, 109,500 acre feet, which can be filled from the Milk river only. All the rest can be filled from the St. Mary. They aggregate 480,500 acre feet, or more than half the average yearly total of St. Mary's river.

Raymond, Milk river, Brunton and Verdigris lake reservoirs parallel Milk river ridge, and would be advantageously filled by a high-level canal following the ridge. This canal was located by Mr. Dennis in 1896 to a point high up on the ridge, far enough to indicate the practicability of continuing it to Verdigris lake, &c. The combined capacities of these last-mentioned reservoirs is 253,500.

I think Mr. Dennis, in speaking of storage in St. Mary ridge (by which he meant Milk river ridge) referred to these reservoirs sites mainly, but at the same time to other minor ones situated in the valleys of the ridge. He mentioned the upper part of Pothole creek as one.

The highest water in St. Mary river occurs in May, June and July. The average of six years' observation gives the monthly average as:

May..	1,800 cubic feet per second.
June..	3,864 " "
July..	2,300 " "

In August, the average falls to about 1,000 cubic feet per second.

Calculating on the basis of these averages, a canal having a capacity of 2,000 second feet would carry half the water.

This would indicate the general course which would probably be pursued in utilizing the water, namely, enlargement of the present canal (800 second feet capacity) to, say, 2,000 second feet capacity, from the intake, some twenty miles, to the point where the high level canal following the Milk River ridge would leave the present location. This new canal might then be of 1,200 second feet capacity.

The above averages are for the month. Daily flows will frequently exceed the monthly average, and this would call for development of the reservoirs near the intake, such as St. Mary's Lake, Taylorville and Lumpy Butte, aggregating in storage capacity 78,000 acre feet.

The construction of such a canal would then place the Canadian Irrigation system in a position to take care of its half of the water of St. Mary's River.

The enclosed blue print shows the reservoir sites spoken of, and the approximate location of the high level canal. This I have marked with cross lines, in red.

(Sgd.) W. F. KING,
Chief Astronomer.

Hon. FRANK OLIVER,
Minister of the Interior,
City.

CANADIAN PACIFIC RAILWAY COMPANY.

MONTREAL, MARCH 4, 1910.

DEAR MR. PUGSLEY,—Mr. J. S. Dennis, who is our Superintendent of Irrigation, wrote me from Ottawa, February 16th, as follows:—

With reference to the interview had this morning with the Hon. Mr. Pugsley and Dr King, Boundary Commissioner, regarding the matter of division of International waters, and to my telephonic communication to you through Mr. Beatty, I send you herewith a copy of Article 6 of the Treaty, together with map of Alberta and a portion of Montana.

As you are aware, I know the local situation very thoroughly, not only on our own side of the line but also on the other, and after very full and careful consideration of the subject, I am quite decided that the division of the waters of

9-10 EDWARD VII., A. 1910

the St. Mary and Milk rivers provided for by Article 6 of the Treaty is perfectly fair and amply protects Canadian interests, as a whole, and the Alberta Railway and Irrigation Company particularly. . . . and that we are in a position to store at suitable points in the St. Mary's Ridge such portion of the high water and flood discharge of the St. Mary and Milk rivers as must be passed to us by the American authorities under the provisions of Section 6 of this Treaty.

There is no question whatever, in my mind, that the Treaty provides for a division of the waters of these two streams on a thoroughly equitable basis, and amply protects our interests in as far as they are concerned with the Alberta Railway and Irrigation Company.

Mr. Pugsley asked that I should write him a letter to that effect, but I said that I would of course desire to consult you before doing so. I am now advising him that he will hear from you direct with reference to the matter, or through Mr. Creelman.

It is probable that Mr. Dennis intended to refer to the Milk River Ridge instead of the St. Mary's Ridge, but I am giving the exact language of his letter.

Personally, I am not sufficiently familiar with the situation, nor have I the requisite technical knowledge to confirm Mr. Dennis' report, but I would accept it without hesitation if it were made the direct reference to any irrigation work or water supply in which this Company was interested.

Yours very truly,

(Sgd.) T. J. SHAUGHNESSY,
President.

Hon. WM. PUGSLEY,
Minister of Public Works.

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DOMINION OF CANADA

ANNUAL REPORT

OF THE

DEPARTMENT OF RAILWAYS AND CANALS

FOR THE FISCAL YEAR FROM APRIL 1, 1908, TO MARCH 31, 1909

*Submitted in accordance with the provisions of the Revised Statutes of Canada, 1906,
Chapter 35, Section 33*

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

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EXCELLENT MAJESTY

1909

[No. 20—1910.]

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, in the County of Northumberland, in the Peerage of the United Kingdom, and a Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, &c., &c., Governor General of Canada.

MAY IT PLEASE YOUR EXCELLENCY,—

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of Railways and Canals, of the Dominion of Canada, for the past fiscal year from April 1, 1908, to March 31, 1909.

GEO. P. GRAHAM,

Minister of Railways and Canals.

CONTENTS.

Part.	—	Page.
	Report of the Deputy Minister and Chief Engineer.....	7
	APPENDICES.	
I	Statements of Accountant of Department.....	31
II	Statements of the Departmental Solicitor, including—	
	Agreements for the construction of railways.....	86
	Contracts entered into.....	90
	Water power and other public property leased.....	94
	Property conveyed.....	106
	Damages released.....	110
III	Reports of General Manager of Government Railways and other officers	119
	Report of Government Railways Provident Fund Board.....	205
IV	Report of the Government Chief Engineer for the Western Division of the National Transcontinental Railway.....	209
V	Report on Hudson Bay Railway surveys.....	215
VI	Reports of the Superintending Engineers and Superintendents of Canals	225
VII	Intercolonial Railway, distances on.....	271
	Windsor Branch Railway, distances on.....	272
	Prince Edward Island Railway, distances on.....	272
	Abstract statements of yearly traffic on the Government Railways.....	273
	Abstract statements of cost of canal construction and enlargement.....	288
	Dates of opening and closing canals, season 1908.....	289
	Comparative statement of canal freight, seasons 1907 and 1908.....	290
	Diagrams of locks.....	292
	Canal routes and lock dimensions.....	295
VIII	Railway Subsidies, Acts respecting.....	309

MAPS.*Railways.*

1. General map of the Dominion.
2. Northern parts of British Columbia and Alberta.
3. Southern parts of British Columbia and Alberta.
4. Manitoba and part of Saskatchewan.
5. Ontario and Manitoba.
6. Ontario and Quebec.

Canals.

7. Nova Scotia, New Brunswick, Prince Edward Island and part of Quebec.
8. Sault Ste. Marie Canal.
9. Welland Canal.
10. Trent Navigation and Murray Canal.
11. St. Lawrence, Ottawa, Rideau and Richelieu Canals.

(For Index see End of Volume.)

REPORT OF THE DEPUTY MINISTER AND CHIEF ENGINEER.

To the Honourable GEO. P. GRAHAM,
Minister of Railways and Canals.

SIR,—I have the honour to submit the annual report of the Department of Railways and Canals for the fiscal period of twelve months ended March 31, 1909.

The annual reports of the engineers, together with general and special reports from superintendents, both of railways and canals, and from other officers in the department are given in appendices.

In Part I. will be found statements showing the amounts expended during the past fiscal year in construction, repair and maintenance of the several works under the department; also statements showing total expenditure on each canal since its construction, and on each of the government railways; also a statement showing the payments made, year by year, to subsidized railways, with the aggregates of such payments.

GENERAL SUMMARY.

During the twelve months of the past fiscal year the expenditures made by or through the department on its several works of operation, maintenance and construction, both railway and canal, and in furtherance by subsidy, under specific votes granted by parliament, of railway enterprises in various parts of Canada other than the government roads, aggregate as follows :—

The total railway expenditure amounted to \$41,569,184.26; of which \$29,414,227.34 was charged to capital, \$2,390,370.41 to income, and \$9,764,586.51 to revenue.

The railway expenditure on capital included \$24,892,422.65 for the eastern division (from Moncton to Winnipeg) of the National Transcontinental Railway, which is being built by a Board of Commissioners; also \$92,427.83 for surveys for a railway to Hudson bay.

The railway expenditure on income included the sum of \$1,785,887.39 paid as subsidies to railways other than the government roads, \$136,969.17 for the Board of Railway Commissioners for Canada, a total of \$355,279.07 to pay the shareholders of the Quebec Bridge Company, which work was taken over by the government, \$31,765.44 for the Bridge Commissioners, and \$35,822.61 for preparing plans for the reconstruction of the bridge.

The expenditure on the Intercolonial Railway was \$13,195,253.71, namely, on capital account, \$3,867,232.16, and on revenue account, \$9,328,021.55. On the maintenance of the Windsor branch the sum of \$36,234.55 was expended on revenue account.

The expenditure on the Prince Edward Island Railway aggregated \$961,537.31, of which \$561,206.90 was charged to capital, and \$400,330.41 to revenue.

9-10 EDWARD VII., A. 1910

The expenditure on canals aggregated \$3,617,531.73; of which \$1,873,868.45 was on capital account, \$728,124.27 on income, \$560,906 for staff, and \$454,633.01 on repairs, the last two items being charged to revenue.

Adding to the above a further sum of \$20,912.04 for miscellaneous expenditures common to both branches, the total expenditure on railways and canals for the year amounts to \$45,207,628.03.

The total revenue received from the government railway and canal works was \$9,093,921.68, of which the canals produced \$199,501.26;* the amount received from hydraulic rents being \$183,603.97. The railways produced \$8,894,420.42.

The total government expenditure on railways prior to and since confederation (July 1, 1867), up to March 31, 1909, amounts, on capital account, to \$215,148,689.38, which includes the sum of \$25,000,000 granted to the Canadian Pacific Railway Company for its main line. In addition, there has been expended from the consolidated fund a total of \$191,176,638.48, which includes \$39,402,019.23, paid as subsidies to railways in addition to the above for the Canadian Pacific, making a total expenditure of \$406,325,327.86.†

Of this amount the sum of \$13,881,460.65 was expended, prior to confederation, on the construction of portions of what is now the Intercolonial Railway system.

The government expenditure on canals prior to and since July 1, 1867, to the close of the fiscal year, March 31, 1909, amounts, on capital account, to \$95,331,742.73, of which \$20,593,866.13 was expended prior to confederation, and from the consolidated fund to \$27,738,116.67, making a total of \$123,069,859.40.

The total expenditure on railways and canals, up to March 31, 1909, is, as above, \$529,395,187.26, adding to which, for general expenditures embracing both, the further sum of \$805,651.53, the grand total expenditure amounts to \$530,200,838.79.

Details indicating the general classes and directions of the above expenditures will be found in the statements furnished by the accountant of the department, and printed in the appendices to this report, Part I.

GOVERNMENT RAILWAYS IN OPERATION.

The government railways are the Intercolonial, the Windsor Branch (maintained only, and leased for operation), and the Prince Edward Island Railway.

Details respecting these railways and their operation will be found in the appendices, Part IV., containing reports from the Chief Engineer of the department, the General Manager of government railways, and the officials of these roads.

The gross earnings of the government roads for the twelve months ended March 31, 1909, amounted to \$8,894,420.42; the working expenses amounted to \$9,764,586.51, showing a deficit of \$870,166.09.

* Under the authority of an order in council, dated June 22, 1905, the system of charging tolls for the passage of vessels and goods was abolished on all the canals of the Dominion. Records, however, are kept for statistical purposes, and the compilation of the resultant figures is given in a separate report issued by the department.

† This amount does not include the annual payment of \$119,700 to the provincial government of Quebec, being interest at the rate of 5 per cent on the sum of \$2,394,000 up to 1905, granted by 47 Victoria, Ch. 8 (1884), nor the annual payment of \$107,730, being interest at the rate of 4½ per cent since and including 1905, on the said sum of \$2,394,000, for the line between Ottawa and Quebec, which sum was transferred to the public debt as a liability, and is dealt with by the Finance Department. (See Public Accounts 1893-4, page 10, and 1906, page 79.)

SESSIONAL PAPER No. 20

The Intercolonial Railway working expenses amounted to \$9,328,021.55; its earnings amounted to \$8,527,069.46; a deficit of \$800,952.09.

The Windsor Branch maintenance expenditure amounted to \$36,234.55; the government earnings amounted to \$56,031.33, leaving a profit of \$19,796.78.

The Prince Edward Island Railway working expenses amounted to \$400,330.41; its earnings amounted to \$311,319.63, the deficit being \$89,010.78.

INTERCOLONIAL RAILWAY.

On March 1, 1898, the operations of the Intercolonial were extended to Montreal by means of leases obtained from the Grand Trunk and Drummond County Railway Companies, making an addition of 169.81 miles to the operation of the government line.

The leasing agreement with the Grand Trunk Railway Company, dated February 1, 1898, was confirmed by the Act 62-63 Vic., chap. 5 (1899). Its term extends for a period of ninety-nine years from March 1, 1898; the annual rental being fixed at \$140,000.

Under authority of the Act 62-63 Vic., chap. 6 (1899) the Drummond County Railway from Chaudière to Ste. Rosalie, together with the branch from St. Leonard to Nicolet, was acquired by the Dominion; conveyance being made by a deed dated November 7, 1899.

On October 1, 1904, the Canada Eastern Railway from Gibson to Loggierville, 123.67 miles, was purchased, and on April 19, 1905, the mortgaged Fredericton and St. Mary's bridge, with connected property, 1.33 mile, was surrendered to the government.

The total mileage in operation during the past year remained the same as in the preceding year. A re-measurement of the railway was, however, carried out during the year, with the result that the length was found to be 1,447.13 miles instead of 1,448.62 miles, and the revised figure has been used in the present official reports. 17.67 miles are double-tracked. This is irrespective of spur lines and sidings and tracks in yards, the aggregate length of which was 364.04 miles.

The reports of the General Manager, the Chief Engineer, the Comptroller and Treasurer, and other officers of the railway will be found in the appendices hereto, Part IV., and very full details are there supplied, which will be of interest.

CAPITAL ACCOUNT.

During the past twelve months of the fiscal year ended on March 31, 1909, there has been an addition to the capital account of \$3,867,232.16, making the total capital expenditure on the whole road as amalgamated under the Acts 54-55 Vic., chap. 50 (1891) and 62-63 Vic., chaps. 5 and 6 (1899), together with the acquired Canada Eastern Railway, \$90,994,664.06.

The principal items charged to capital were as follows (omitting cents): for rolling stock, \$1,353,646; for locomotive and car shops, with equipment, \$569,994; new machinery for shops, \$154,497; double-tracking parts of line, \$199,775; strengthening bridges, \$131,534; increased accommodation and improvements: at Halifax, \$499,973; at Amherst, \$27,211; at Chaudière Junction, \$40,078; at Mulgrave, \$28,490; at New-

9-10 EDWARD VII., A. 1910

castle, \$37,721; at Rivière-du-Loup, \$112,246; at Sackville, \$26,985; at Ste. Rosalie, \$34,072; at St. John, \$99,324; at Truro, \$104,947; for increased accommodation and facilities generally, \$176,955; for putting the railway from Indianatown to Blackville in condition for operation, \$79,996. The expenditure also included the fitting of automatic quick action air brakes and side ladders to a further number of freight cars.

REVENUE ACCOUNT.

In the new account system, adopted in November, 1906, expenditures on revenue account are grouped under five main heads, each of which is subdivided into a number of sub-heads.

The main heads and the expenditures under them for the twelve months of the fiscal year ended March 31, 1909, are as follows: Maintenance of way and structures, (26 sub-heads), \$1,750,931.83, against which is a credit of \$9,535.10 for maintaining joint tracks, yards, &c., leaving the net amount \$1,771,396.73; maintenance of equipment (13 sub-heads), \$2,096,491.97; traffic expenses (5 sub-heads), \$186,749.69; transportation expenses, (39 sub-heads), \$5,115,842.25; against which is credited the sum of \$69,755.93, for operating joint yards and terminals, making the net cost \$5,046,086.32; general expenses (8 sub-heads), \$227,296.84.

The aggregate expenditure under these five headings was \$9,328,021.55.

The gross earnings of the year amounted to \$8,527,069.46, leaving a deficit of \$800,952.09.

The passenger earnings amounted to \$2,628,218.57, or 30.82 per cent of the gross earnings; the freight earnings were \$5,502,550.58, or 64.53 per cent; the mail and express earnings were \$350,478.58, or 4.1 per cent, and miscellaneous items amounted to \$45,821.73, or one-half of one per cent.

The gross earnings per mile of railway, (1,447.13 miles) were \$5,892.40; per engine mile, 92.60 cents; per train mile, \$1.24, and per car mile, 9.13 cents.

The total engine mileage was 9,208,327 miles; the total train mileage, 6,865,204 miles, and the total car mileage, 93,374,119 miles.

The expenses per mile of railway were as follows: Maintenance of way and structures, \$1,224.08; maintenance of equipment, \$1,448.72; traffic expenses, \$129.06; transportation expenses, \$3,486.96, and general expenses, \$157.07; total \$6,445.89.

The expenses per train mile were as follows: Maintenance of way and structures 25.80 cents; maintenance of equipment, 30.54 cents; traffic expenses, 2.72 cents; transportation expenses, 73.50 cents, and general expenses 3.31 cents; total, \$1.3587.

The ratio of expenses to the gross earnings was as follows: Maintenance of way and structures, 20.77 per cent; maintenance of equipment, 24.58 per cent; traffic expenses, 2.19 per cent; transportation expenses, 59.18 per cent, and general expenses, 2.67 per cent.

The items of cost of 'maintenance of way and structures' include (omitting cents): ties, \$316,449; rails, \$77,892; other track material, \$120,264; roadway and track, \$577,405; removal of snow, sand and ice, \$134,434; bridges, trestles and culverts, \$53,484; grade crossings, fences, cattleguards and signs, \$62,396; buildings, fixtures and grounds, \$180,557.

The items of 'maintenance of equipment' include (omitting cents), repairs and

SESSIONAL PAPER No. 20

renewals of locomotives, \$897,582; of passenger cars, \$340,492; and of freight cars, \$702,065; shop machinery and tools, \$43,188.

The items of expenditure under the heading 'traffic expenses,' include (omitting cents), for outside agencies, \$59,340; and for advertising, \$49,009.

The items of 'transportation expenses' include (omitting cents), despatching trains, \$158,437; station employees, \$649,156; yard conductors and brakemen, \$128,853; station supplies and expenses, \$100,817; yard enginemen, \$113,637; fuel for yard locomotives, \$176,915; operating joint yards and terminals, \$101,843; road enginemen, \$491,628; engine house expenses, \$252,947; fuel for road locomotives, \$1,547,331; road trainmen, \$647,722; train supplies and expenses, \$192,592; and operating floating equipment, \$49,905.

The items of 'general expenses' included (omitting cents); contribution to provident fund, \$71,122, and law expenses, \$10,365.

Compared with the 12 months ended on March 31, 1908, the corresponding period ended on March 31, 1909, resulted in a decrease in gross earnings of \$646,489.34. The passenger traffic showed a decrease of \$83,198.41; the freight traffic a decrease of \$551,942.87, and there was a decrease of \$11,348.06 in the receipts for mails and express. There was a decrease of \$440.22 per mile of railway, and of 1 cent per train mile.

A comparison of working expenses for the same period shows an increase of \$170,586.02, or, per mile of railway, an increase of \$124.41; per engine mile, an increase of 8.44 cents, and per train mile, an increase of 10 cents.

The following was the total equipment of the railway on March 31, 1909: Total locomotives, 414; total cars of all kinds, 13,132; comprising sleeping cars, first-class, 41; second-class, 50; parlour cars, 9; dining cars, 9; passenger cars, first-class, 138; second-class, 99; postal and smoking cars, 34; express and baggage cars, 65; air-brake and instruction car, 1; steam motor cars, 4; box cars, 7,096; refrigerator cars, 144; platform cars, 3,075; pulp wood cars, 50; oil tank cars, 40; hopper cars, 1,199; gondola coal cars, 17; coal cars, (20-ton capacity), 471; stock cars, 148; auxiliary tool cars, 23; convertible dump cars, 200; steel side dump cars, 100; vans, 119. In addition, there were 53 common snow ploughs, 20 wing-ploughs, 2 rotary steam ploughs, 2 double-track ploughs, 1 double end plough, 25 flangers; making a total of 103 ploughs and flangers, 12 steam cranes and 2 ballast plough cars.

It has to be observed that of the total equipment above set out, 5 locomotives and 329 cars of various kinds were listed as to be replaced at the close of the year.

Two locomotives were condemned during the year; 136 cars of various kinds were condemned and 74 replaced, and 83 were destroyed by fire.

On capital account the following items of rolling stock were purchased: 22 locomotives, consolidation type; 4 locomotives, Pacific type; 3 switching; 10 second-class sleepers; 4 express and baggage cars, 24 box cars, 80,000 pounds capacity; 448 box cars, 60,000 pounds capacity; 4 refrigerator cars, 60,000 pounds capacity; 100 steel side dump cars of 100,000 pounds capacity; 4 steam cranes.

On revenue account, the following items of rolling stock were purchased: 1 express and baggage car; 2 refrigerator cars, 60,000 pounds capacity, replacing cars of smaller capacity; 38 hopper cars, 30,000 pounds capacity, replacing smaller capacity cars.

The work at Moncton included general repairs to 100 locomotives, heavy repairs

9-10 EDWARD VII., A. 1910

to 19 and light repairs to 21 locomotives; 3 new cars were built, 33 rebuilt, 315 received heavy repairs and 9,076 received light repairs.

At Richmond, 12 locomotives received heavy repairs, 1 medium and 135 specific; in addition, extensive repairs were made to a large number of freight and passenger cars.

At Rivière du Loup, 14 locomotives received general repairs, 8 medium and 42 specific repairs; in addition, light repairs were made to a large number of freight and passenger cars.

The report of the Superintendent of Motive Power, which will be found in the appendices, gives full information as to the details of the work done in these shops.

The value of the stores on hand on March 31, 1909, was \$1,599,094.59; including fuel and roadway bridge material, of which the value was \$610,276.97.

GENERAL NOTES *re* INTERCOLONIAL RAILWAY.

The number of passengers carried was 2,907,237, an increase, compared with the previous year, of 117,866, of which increase 62,331 were local and 55,535 through passengers.

Of freight, 3,573,972 tons were carried, a decrease of 560,092 tons; local traffic having been decreased by 484,981 tons, and through traffic by 75,111 tons.

The following shows the principal items comprised in the freight traffic:

The railway carried:

Of agricultural products, 367,503 tons, including 103,896 tons of grain and 146,692 tons of flour; of animals, poultry and fish and their products, 71,556 tons, including 17,342 tons of dressed meats and 26,428 tons of fish; of products of mines, 1,289,332 tons, including 1,115,937 tons of coal and coke; and 159,300 tons of stone, sand, &c.; of products of the forest, 879,045 tons, including 352,888 tons of lumber and 167,129 tons of pulp wood; of manufactured goods, 630,165 tons, including 101,340 tons of rails, 98,834 tons of pig and bloom iron, and 115,590 tons of steel billets, 26,466 tons of petroleum and oils, and 46,300 tons of sugar; 327,369 tons of miscellaneous goods were carried.

The following comparative statistics dealing with traffic will be of interest:—

In 1907-8 the average tons of freight carried per train, producing revenue, was 228.34, and the number of passengers 52.82; in 1908-9 the average freight tonnage was 229.95, and passengers 51.61.

In 1907-8 the average tons per loaded car, producing revenue, was 16.82, and the number of passengers 9.10; in 1908-9 the number of tons was 16.66, and of passengers 8.81.

The number of tons per train, all freight, in 1907-8, was 238.04, and in 1908-9, 235.46.

The number of tons per car, all freight, in 1907-8 was 17.54, and in 1908-9, 17.07.

The average distance each ton of freight was carried, in 1907-8 was 252.84 miles, and in 1908-9, the distance was 267.59 miles. The average distances passengers were carried in those years were 52.21 miles, and 48.04 miles respectively.

The average number of loaded cars per train in 1907-8, was 13.57 cars of freight

SESSIONAL PAPER No. 20

and 5-50 cars of passengers; in 1908-9 the number of freight cars per train was 13-80, and of passengers, 5-86.

The average number of empty cars per train in 1907-8 was 3-16, and in 1908-9, 3-93.

In 1907-8, the average of train miles per mile of road was, for freight, 3160-06, and for passengers, 1903-38; in 1908-9, these figures were, respectively, 2873-96, and 1870-06.

In 1907-8 the average per mile of road of revenue producing freight carried one mile was 721,575-27 tons, and passengers, 100,535-40; in 1908-9, the figures were, freight, 660,857-05 tons, and passengers, 96,519-39.

The number of tons all-freight per mile of road, carried one mile in 1907-8 was 752,232-58, and in 1908-9, 676,705-26.

The train mileage in 1907-8 was: passenger, 2,757,269 miles, freight, 4,577,731 miles; in 1908-9: passenger, 2,706,214 miles; freight, 4,158,990 miles.

The loaded car mileage in 1907-8 was 62,137,781 miles, and in 1908-9, 57,381,108 miles.

The empty car mileage in 1907-8 was 14,486,963 miles, and in 1908-9, 16,356,184 miles.

The caboose car mileage in 1907-8 was 4,211,619 miles, and in 1908-9, 3,776,649 miles.

The steam motor car mileage (passenger) was 21,997 miles in 1908-9.

The total car mileage in 1907-8 was: passenger, 16,003,590 miles, and freight, 80,-836,461 miles; in 1908-9, the figures were: passengers, 15,860,178, and freight 77,513,941.

The total freight moved in 1907-8 was 4,359,571 tons; of this quantity, 4,134,071 tons were revenue-producing. In 1908-9, the total freight moved was 3,751,724 tons, of which 3,573,942 tons were revenue-producing.

Repairs to passenger cars cost, per car, in 1907-8, \$718.09, or per car mile, -0194 of a cent, and in 1908-9, \$630.51, or, per car mile, -0172 of a cent.

Repairs to freight cars cost, per car, in 1907-8, \$53.83, or, per car mile, -0073 of a cent, and in 1908-9, \$47.86, or, per car mile, -0078 of a cent.

Repairs to locomotives cost, per locomotive, in 1907-8, \$2,116.75, or, per locomotive mile, -0794 of a cent, and in 1908-9, \$1,884.53, or, per locomotive mile, -0828 of a cent.

Details of works executed, of freight movement, of rolling stock, together with various financial and other statements, will be found in the appendices to this report.

The extensive works at Moncton in the way of reconstruction of the railway shops, necessitated by the disastrous fire in February 24, 1906, have made good progress, several of the shops being now completed. A quantity of up-to-date machinery has been installed.

WINDSOR BRANCH.

The road is 32 miles in length. It extends from Windsor Junction, on the Inter-colonial Railway, to Windsor.

The railway is operated by the Dominion Atlantic Railway Company, formerly the Windsor and Annapolis Railway Company. The company pay all charges in connection with the working of the traffic, two-thirds of the gross earnings being allowed

9-10 EDWARD VII., A. 1910

them, the government taking the remaining one-third, and assuming all cost of maintenance of the road and works. This arrangement is carried out under an agreement dated December 13, 1892, which extends for a further term of twenty-one years, arrangements similar to those made in 1871.

All charges for superintendence and supervision of maintenance of work are borne by the government; the duty of supervision is performed by the chief officers of the Intercolonial Railway.

The gross government receipts for the twelve months of the fiscal year ended on March 31, 1909, amounted to \$56,031.33. The expenses of maintenance aggregated \$36,234.55, leaving a net profit of \$19,796.78.

PRINCE EDWARD ISLAND RAILWAY.

The mileage of the railway for the twelve months of the fiscal year ended on March 31, 1909, remained the same as in the previous year, namely, 267.5 miles.

There was an addition to the capital account expenditure during the year of \$561,206.90, making the total capital expenditure on the railway up to March 31, 1909, \$8,258,967.94. The main items of the increase were the provision of further accommodation at Charlottetown, on which \$227,661.81 was expended; arbitrators' award in connection with the contract for Hillsborough bridge, \$164,633.33; wharf extension at Souris, \$41,480.83. New machinery was purchased for the new railway shops at Charlottetown, to the value of \$19,893.79, and rolling stock (42 box cars) to the value of \$34,622.32, was built at the Charlottetown shops.

REVENUE ACCOUNT.

The gross earnings of the year amounted to \$311,319.63, and the working expenses to \$400,330.41, making an excess of expenditure over earnings of \$89,010.78.

The expenditure on revenue account (working expenses) is classified in the same way as that of the Intercolonial, namely, under five heads, with their several sub-heads. It comprised: 'Maintenance of way and structures,' \$114,473.32, which included, for repairs to roadway, \$64,667.04, and repairs to buildings and fixtures, \$8,487.78; 'Maintenance of equipment,' \$62,250.46, included in which was a total of \$23,946.86 for repairs of locomotives, and \$16,666.87 for repairs and renewals of passenger cars; 'Traffic expenses,' \$1,314.58; 'Transportation expenses,' \$209,997.20; 'General expenses,' \$12,294.85, which includes the salaries of the general officers, clerks and attendants.

The number of passengers carried was 332,758, producing \$136,534.04. Of freight, 106,090 tons were carried, producing \$149,150.61. The earnings from mails and sundries amounted to \$25,634.98. The total earnings showed an increase of \$6,739.80 over the previous year.

The freight included agricultural products, 27,034 tons; animals, poultry, fish and products, 11,313 tons; products of mines, 13,520 tons; forest products (lumber), 13,219 tons; manufactures, 7,038 tons; miscellaneous, 33,966 tons.

The engine mileage aggregated 452,534 miles; the train mileage, 334,982 miles, and the car mileage, 2,098,701 miles.

The gross earnings per mile of railway amounted to \$1,165.99; per engine mile, to 68.79 cents; per train mile, to 92.94 cents, and per car mile, to 14.83 cents.

SESSIONAL PAPER No. 20

The working expenses per mile of railway amounted to \$1,499.36, and per train mile to 119.51 cents.

The value of stores on hand on March 31, 1909, was \$77,442.27, including fuel. \$15,144.91.

The total rolling stock equipment of the railway on March 31, 1909, was as follows: Locomotives, 31; passenger cars, first-class, 23; second-class, 12; combined second and baggage cars, 7; postal and smoking, 4; combined postal and baggage, 4; baggage, 6; pay-car, 1; vans, 4; box freight, 313; refrigerator cars, 3; stock cars, 21; coal cars, 22; platform, 147; or a total of 567. In addition, there were 10 snow ploughs and 9 flangers.

BOARD OF RAILWAY COMMISSIONERS FOR CANADA.

By the Act 3 Edward VII., chap. 58 (1903), amending and consolidating the law respecting railways, the Railway Committee of the Privy Council was abolished, and in lieu thereof a Board of Commissioners, under the above title, was created, to consist of three members (increased to six by the Act of 1908, chap. 62), to be appointed by the Governor in Council; this Act was brought into force on February 1, 1904, by proclamation, on the authority of an order in council, dated January 18, 1904, which also appointed certain persons as commissioners. By the Act of 1908, chap. 61, the jurisdiction of the board was extended to cover the operation of telegraph and telephone lines, and by the Act of 1908, chap. 62, certain amendments were made to its constitution and otherwise. The office of the board is at Ottawa, though it is authorized to hold sessions in any part of Canada. Its decisions and orders are final, subject to appeal to the Supreme Court upon questions of jurisdiction or law, and also to action thereon by the Governor in Council, in his discretion.

It is required to make, annually, a report of its proceedings, which report is laid before parliament. The report for the year ended March 31, 1909, has been received, and will be laid before parliament in due course.

NATIONAL TRANSCONTINENTAL RAILWAY.

Under an agreement, dated July 29, 1903, ratified by the Dominion Act of that year, chap. 71, and under a modifying agreement dated February 18, 1904, ratified by the Act of that year, chap. 24, the Grand Trunk Pacific Railway Company, a company incorporated by the Act of 1903, chap. 122, have undertaken certain obligations in respect of a line of railway, wholly upon Canadian territory, between the city of Moncton, in the province of New Brunswick, and the navigable waters of the Pacific ocean, at or near Port Simpson or some other port in British Columbia, as may be agreed upon. The railway is composed of two divisions, namely, the eastern division, between Moncton and Quebec, thence westerly through the northern part of the provinces of Quebec and Ontario, and in the province of Manitoba to the city of Winnipeg, and the western division, between Winnipeg and the Pacific ocean. The eastern division is being constructed by the government under four commissioners appointed by the Governor in Council, and on completion is to be leased to and maintained and operated by the company, who undertake to construct at their own cost and to main-

9-10 EDWARD VII., A. 1910

tain and operate the western division. The lease of the eastern division is to be for a period of 50 years, at a rental of three per cent per annum upon the cost of its construction; the first seven years of the term to be free of rent; both divisions are to be equipped by the company, the first equipment to be of a value not less than \$20,000,000.

By way of assistance to the company in the construction of the western division, it is provided that the government shall guarantee payment of the principal and interest of an issue of bonds to be made by the company for an amount sufficient to produce a sum equal to 75 per cent of the cost of its construction, such amount not to exceed \$13,000 per mile in respect of the prairie section from Winnipeg to the eastern limit of the Rocky mountains (such limit to be established by the chief engineer of the company and the chief engineer of the government, as the result of actual surveys to be made).

The several government expenditures to be made under these Acts and agreements are to be so made from appropriations by parliament for the purpose, and on the recommendation of the Minister of Railways and Canals, to whom accounts of all receipts, expenditures and liabilities are to be furnished monthly. The board are required to furnish annually a report to the Governor in Council, through the Minister of Railways and Canals, showing the receipts and expenditures of the year, and other information as to the railway, which report is to be submitted to parliament.

The headquarters of the Board are in the city of Ottawa.

The report of the Board for the fiscal period of 12 months ended March 31, 1909, has been prepared, and will be laid before parliament in due course.

The following is a brief summary of some of the more important features of the year's work, and of the position at the close of the year.

On the western division of the railway, in course of construction by the Grand Trunk Pacific Railway Company, the position at the close of the fiscal year, March 31, 1909, is shown by the report, dated April 7, 1909, made by the government chief engineer of that division, Mr. Collingwood Schreiber, C.M.G., to be as follows:—

This division is about 1,752 miles in length, and is composed of two sections. 'The prairie section,' extending westward from the city of Winnipeg, to the east bank of Wolf creek, a distance of 915 miles (Wolf creek being at a point 123 miles west of Edmonton) and the 'Mountain section' extending from Wolf creek to Prince Rupert, the terminus of the railway on the Pacific coast, a distance of about 836 miles.

On the 915 miles of 'Prairie Section,' 861 miles had been graded and bridged, and the track had been laid for a distance of 697 miles. The railway has been operated for public traffic since September 21, 1908, for a distance of 667 miles, namely, from Winnipeg to Wainwright. The road is fenced for a distance of 340 miles. The telegraph line has been erected for a distance of 675 miles, from Winnipeg to Battle River Bridge.

All the steel bridges on this section had been completed by March 31, 1909, with the exception of those over the River Assiniboia at Winnipeg, and those over Eagle river, and the River Pembina, the substructure of the last, which is a structure 820 feet in length and 200 feet high, being nearly finished.

Some of the bridges completed are of big dimensions; that over the south Saskatchewan river being 1,501 feet long and 74 feet high; that over the north Sas-

SESSIONAL PAPER No. 20

katchewan river being 665 feet long, and 136 feet high, while the bridge built over the Battle river is 2,772 feet long and 178 feet in height.

The expenditure on the 'prairie section' up to March 31, 1909, was \$26,913,934.59, including \$1,099,556.66, net interest on bonds; the expenditure on works and materials being \$25,814,377.93. Mr. Schreiber sets down the estimated cost of this section at \$33,007,449.

He makes some observations explanatory of the fact that the cost of construction much exceeds the original estimate, made before the contract was entered into, and draws attention to certain special features, where the cost in 1906-7 had greatly increased over the cost in 1903, including the prices for steel rails (the weight, also, of which had been increased from 65 pounds to 80 pounds to the yard) ties, and timber; also the cost of labour, which even at the higher rate, it has been difficult to obtain.

With regard to the 'mountain section,' Mr. Schreiber states that certain progress has been made during the year on the 100 miles under contract easterly from Prince Rupert, and that a large wharf and a warehouse have been built at that place; the total expenditure on the 'mountain section' being \$3,768,825.90.

The fifth annual report of the Commissioners of the Transcontinental Railway, under whom the eastern division of the road, namely, from Moncton to Winnipeg, about 1,804 miles, is being built, has been prepared, and will be laid before parliament in due course.

This report, which is accompanied with reports from their chief engineer and district engineers, shows the expenditure for the year to have been \$24,892,772.98, making a total up to March 31, 1909, of \$51,950,717.02.

The position at the close of the year, as gathered from these reports, was as follows:—

The entire line, except the entrance into the city of Winnipeg was under contract; also, the construction of the bridge to carry the railway over the Red river at that point. The contract for the locomotive and other shops at a point about 5½ miles east of Winnipeg, was awarded towards the close of the year. 725 miles of grading had been executed, on which the main line track has been laid for a distance of 283.49 miles, with 61.94 miles of sidings, spurs, &c., making a total of 345.43 miles of track laid.

SURVEYS FOR A RAILWAY TO HUDSON BAY.

In view of the interest taken in the question of the feasibility of constructing a line of railway with easy grades and curves to connect with Hudson bay, and the national importance attaching to its determination, it was decided, in the summer of 1908, to send out surveying parties between La Pas Mission on the river Saskatchewan (up to which a railway has been built as part of the Canadian Northern Railway) and the bay. Such parties were, accordingly, organized under Mr. John Armstrong, as chief engineer, and have carried on their work to such good effect that in February last, Mr. Armstrong was enabled to make a progress report, with estimates of cost.

9-10 EDWARD VII., A. 1910

From this report, which will be found printed in the appendices hereto, it appears that two routes have been found, one to Fort Churchill, and the other having its terminal on the bay at Port Nelson, on the River Nelson. He sets down the length of the Churchill route from the Pas at 465 miles, of which about 320 miles have been surveyed, and the cost at \$11,608,585; the length of the Port Nelson route being 397 miles and the estimated cost \$8,677,350 to which, in both cases, the cost of terminals has to be added. He considers that the probable total cost of either road would be \$17,000,000 or \$18,000,000. This estimate, however, as he explains, is based on incomplete surveys and exploratory reports. The unit prices used in Mr. Armstrong's estimate I consider too low.

He observes that while the Churchill harbour seems to be the best natural harbour on the west coast of the bay, much excavation, probably in rock, would be requisite to obtain the necessary depth for a commercial port. As for the River Churchill itself, he states that it is full of rapids and falls, and not of much use as a transport route, though offering great facilities for the development of power for the electrification of the railway, if desired.

The Port Nelson harbour is described as requiring improvement by dredging a channel for a distance of about ten miles, but this would probably be in easy material.

Comparing the two harbours by the light of information obtained from the records of the Hudson Bay Company kept between the years 1824 and 1894 in respect of Fort Churchill, which was compiled and published by the Geographical Department in 1897, and information in respect of the like records of York Factory (about 20 miles from Port Nelson) kept between 1828 and 1879 published by that department in 1879-80, it appears that the average length of the open season at Fort Churchill is five months, at York Factory, six months, and at Port Nelson, seven months. The harbour at Port Nelson is said never to freeze over, though ice drifts up and down it with the tides. Further surveys, however, are necessary to the determination of the relative value of the two harbours as terminal for a railway.

Mr. Armstrong has directed attention to the possibility of the construction, at some future time, of a canal from the bay up the Nelson river to Lake Winnipeg, and, in this connection, furnishes some interesting information.

The Nelson river is described as about 400 miles in length, extending from Lake Winnipeg. It discharges an immense volume of water, deriving the same from the summit of the Rocky mountains through the North and South Saskatchewan rivers, and draining all the waters of the province of Manitoba and an immense area of North Dakota, Minnesota and western Ontario. From Lake Winnipeg where these waters are gathered, to Hudson bay the fall is set down at about 710 feet.

Though not likely to come within the scope of practical consideration for many years, the possibility of the building of such a canal at some future time exists, and it is undoubtedly wise to hold it in view in the selection of a terminal for any Hudson bay railway. The possibility of ships utilizing this grand waterway for the transport of goods and grains from the heart of Manitoba to the great sea at the north and so to the ocean, is an alluring one, and together with other developments of western river waters centering in Lake Winnipeg, may some day, form one of the engineering features of the progress of Canada's inland provinces.

SESSIONAL PAPER No. 20

SUBSIDIZED RAILWAYS.

The memoranda of action taken in connection with Dominion subsidized railways which, in previous annual reports, have formed a somewhat extensive feature of the Deputy Minister's report, are now discontinued; information being conveyed in the statements of the accountant and the law clerk of the department, respectively, which will be found in the appendices hereto. The accountant's statement shows all payments made, year by year, since the beginning of the system of railway subsidies; the law clerk's statement shows the several subsidy agreements entered into during the past year, with certain details of the specification in each case.

CANALS.

The total expenditure on the Dominion canals for the twelve months ended March 31, 1909, was \$3,617,531.73, comprising, for works of construction, \$1,873,863.45, charged to capital; \$728,124.27 for maintenance, charged to income, \$560,906 for staff and \$454,633.01 for repairs; the last two items being charged to revenue.

The balance of rentals due on April 1, 1908, was \$166,420.61. The rentals accrued during the year amounted to \$171,803.66, making a total of \$338,224.27. Of this amount, there was collected during the year a total of \$183,603.97. The balance remaining due on March 31, 1909, after deducting abatements, was \$148,795.35. It should be observed that, as a general rule, rentals are payable in advance, this fact accounting, to a considerable extent, for the large amount of rentals due at the end of each year.

The total net revenue collected amounted to \$199,501.26 the balance being made up from wharfage dues, fines, &c. No tolls are charged on any of the Dominion canals.

Summaries of these expenditures and receipts will be found in the statements furnished by the accountant of the department, printed in the appendices, Part I., of the present report.

The above figures relate to the fiscal year 1908-9, but very voluminous statistics relating to the canal traffic, and various commercial statistics for the season of navigation of the year 1908 will be found in the 'Canal Statistics,' which are issued as a separate report.

The principal facts of these statistics, summarized, are as follows:—

The total traffic through the several canals of the Dominion for the season of 1908 amounted to 17,502,820 tons, a decrease of 3,040,819 tons compared with the previous year. 280,830 passengers were carried, an increase of 1,631.

The following features of the principal canal traffic during the season of 1908 will be of interest:—

On the Welland canal 1,703,453 tons of freight were moved, an increase of 89,321 tons, of which 867,037 tons were agricultural products, a decrease of 80,266 tons, and 180,022 tons produce of the forest; of coal 316,921 tons were carried; of the total tons carried 1,292,493 passed eastwards, and 410,960 tons westward. 1,695,429 tons were through freight, of which 1,285,229 tons passed eastward.

Of the through freight, Canadian vessels carried 921,321 tons, an increase of 184,481 tons, and United States vessels, 774,108 tons, a decrease of 93,373 tons.

9-10 EDWARD VII., A. 1910

The total through freight passed eastward and westward through this canal to United States ports was 448,654 tons; an increase of 51,997 tons compared with the year 1907.

The quantity of grain passed down the Welland and St. Lawrence canals to Montreal was 756,141 tons, an increase of 120,568 tons compared with the previous year; no transshipments have been made at Ogdensburg since 1903. The further quantity of 20,233 tons of grain passed down the St. Lawrence canals, only to Montreal, making the total 776,374 tons.

On the St. Lawrence canals 2,009,102 tons of freight were moved, a decrease of 91,364, of which 1,315,682 tons were eastbound through freight, and 257,317 tons westbound through freight; 867,037 tons were agricultural products; 826,177 tons merchandise; 430,004 tons coal, and 180,022 tons forest products.

In 1908, 111 cargoes of corn and wheat, aggregating 343,733 tons, were taken down direct to Montreal through the Welland and St. Lawrence canals, as against 116 cargoes and 168,796 tons in 1907; 84 cargoes aggregating 108,734 tons in 1906; 115 cargoes, aggregating 180,206 tons in 1905; 75 cargoes, aggregating 116,098 tons in 1904, and 74 cargoes, aggregating 99,582 tons in 1903. In 1900 there were only 15 cargoes, aggregating 7,924 tons.

On the Ottawa river canals the total quantity of freight moved was 258,527 tons, a decrease of 79,323, of which 204,490 tons were produce of the forest.

On the Chambly canal 503,276 tons were moved, a decrease of 122,006, of which 482,025 tons were produce of the forest and 95,511 tons of coal.

On the Rideau canal 89,640 tons were carried, an increase of 7,271; 33,225 tons being produce of the forest, and 13,115 tons of coal.

On the St. Peter's canal 72,015 tons were carried, a decrease of 1,159; 48,330 tons were merchandise and 41,491 tons coal.

On the Murray canal 12,595 tons passed, a decrease of 10,911, and 603 tons of this were the product of the forest.

On the Trent canal 81,690 tons were moved, of which 65,377 tons were the product of the forest.

On the Sault Ste. Marie canal the total movement of freight was 12,759,216 tons being a decrease of 2,828,949 tons, carried in 5,293 passages of vessels, the number of lockages being 3,667. Of wheat, 58,567,143 bushels and of other grain, 20,582,403 bushels were carried; 1,847,157 barrels of flour, 7,385,103 tons of iron ore, 2,390,109 tons of coal, and 33,652,355 feet, board measure, of lumber.*

* The following summary of the total traffic of the American and Canadian canals at the Sault Ste. Marie for the season of 1908 is taken from the statistical report prepared under the direction of Lieut.-Col. C. McD. Townsend, Corps of Engineers, U.S. Army:—

Total freight carried, tons 41,390,557; total tons net register, 31,091,730; total mile-tons, 34,853,518,177; total valuation placed on freight carried, \$470,141,318; total amount paid for freight transportation, \$23,903,244; total number of registered vessels using the canals, 806; total number of passages by unregistered crafts carrying freight, 286; total valuation placed on registered vessels, \$111,697,000; total number of passengers transported, 53,287; average distance freight was carried, 842 miles; average cost per ton for freight transportation, 58 cents; average cost per mile per ton, 0.69 mills; average value per ton of freight carried, \$11.36.

The Canadian canal passed 31 per cent of the total freight, and 57 per cent of the passengers.

Compared with the season of 1907, there was a decrease in traffic of 16,826,657 tons, due mainly to a decrease of 14,944,604 tons in the quantity of iron ore carried.

It has to be observed that the traffic figures do not, in all cases, agree with those of the Canadian canal, a fact which is probably due, to some extent, to certain differences existing between the standards and classifications of the two countries.

SESSIONAL PAPER No. 20

In conjunction with the information contained in the note below, it is interesting to compare the enormous traffic at the Sault Ste. Marie with the traffic through the Suez canal, the other great artificial waterway of the world; the figures for that work are taken from the official returns for the year 1908 (with comparisons for the two previous years) presented to the British house of parliament in June, 1909.

From the document, it appears that during the year 1908, vessels to the number of 3,795 passed through the Suez canal, of a gross tonnage of 19,110,831 tons, and a net tonnage of 13,633,283 tons. The receipts amounted to 108,462,235 francs, equivalent, approximately, to \$20,605,924. The total number of passengers carried was 219,024, of whom 71,719 were troops of various nationalities.

The rate of charge for transit was 7.75 francs per ton.

The maximum draught of vessels permissible was 28 feet.

In connection with the question of canal versus railway transport of grain from the west, it may be noted that whereas grain and pease passed down to Montreal through the Welland and St. Lawrence canals to the extent of 756,141 tons, an increase of 120,568 tons compared with the previous year, the quantity carried to Montreal via the Canadian Pacific and Grand Trunk railways amounted to 285,262 tons, a decrease of 98,473 tons.

The quantity of grain carried to tidewater on the New York state canals was 183,927 tons, a decrease of 55,917 tons, while the quantity carried by the railways of the state to tidewater amounted to 7,900,862 tons, a decrease of 678,693.

By means of the enlarged Canadian canal system and the intermediate waterways, a minimum depth of fourteen feet of water from Lake Superior to the head of the ocean navigation at Montreal is afforded; the smallest locks being 270 feet in length and 45 feet in width, intended, for the purpose of ordinary traffic, to accommodate vessels 255 feet long and 44 feet beam.*

The foot note below relating to the Erie canal will be found of interest.**

The through route between Montreal and Fort William and Port Arthur, on the west shore of Lake Superior, comprises 73 miles of canal, with 48 locks, and 1,167 miles of river and lake water, or a total of 1,230 miles. From Montreal to Duluth, at the southwest of Lake Superior, the total distance is 1,354 miles, and to Chicago, 1,286 miles. A summary of this route will be found in Part VII., with details of the several works. At Port Arthur and at Fort William (about six miles apart), the Canadian Pacific Railway gives communication westward and eastward, and the Canadian Northern Railway westward and with the south at Fort William.

* In exceptional cases this length can, with certain manœuvring, be somewhat increased, being governed, of course, by the form of the vessel. As a matter of fact, there are vessels now using the canals whose length, over all, is 265 feet, and width of beam 37 feet.

** The Erie Canal, between Buffalo and Albany, is 350½ miles long; comprises 72 locks, 110 x 18 feet, with a depth of 7 feet of water, accommodating, as a maximum, vessels of 240 tons burden. The original canal was completed in 1836, and the enlargement to the above dimensions in 1862. The total cost of construction was \$51,609,200.

There is now under construction an enlarged canal, authority for which was given in 1903. The locks were to be 328 feet long by 28 feet wide in the clear, with 11 feet of water on the mitre sills. The estimated cost was \$100,562,993. It was intended to accommodate barges of 1,000 tons burden. In 1905 the width of the locks was increased to 45 feet, and construction is proceeding on this basis. When completed, it will permit the passage of lake boats carrying 2,600 tons.

Up to the end of May, 1909, work to the value of \$36,544,877 had been put under contract, and work to the value of \$10,474,448 had been executed.

9-10 EDWARD VII., A. 1910

A line of railway is being built from Fort William by the Grand Trunk Pacific Railway to give communication with the Transcontinental Railway.

The approaches to the canals and the channels through the intermediate river reaches are well defined, and are lighted with gas buoys under the control of the Department of Marine and Fisheries, admitting of safe navigation, in the hands of competent pilots, both by day and night. In the cases of the Sault Ste. Marie, the Welland, the Cornwall, the Soulanges and the Lachine, they are well lighted throughout by electricity. The Sault Ste. Marie, the Cornwall, the Soulanges and the Lachine canals are electrically operated. Installations for electrical operation of the Welland canal are in progress. The Farran's Point canal is lighted with acetylene gas.

The desirable work of widening the Lachine canal at St. Henri and Côté St. Paul, and of supplying wharf accommodation at those points has been placed under contract.

The dykes, known as the Ste. Barbe and the Hungry Bay dykes, which have been damaged by the high water of Lake St. Francis, have been repaired and certain works of protection are being carried out.

On the Chambly canal, a new and enlarged power house for the electrical lighting of the whole canal is in course of construction. This will take the place of the old power house destroyed by ice in the spring of 1904. At present, about 2 miles, only, at the lower section of the canal, is lighted by electricity. The strengthening wall at Ste. Thérèse, rendered necessary by the break in the canal bank four years ago is now satisfactorily completed.

At St. Ours lock, the electrical lighting of the lock and its approaches was installed, and its operation has been a great advantage to navigation.

On the River Ottawa canals, the break in the Carillon dam, caused by the spring freshets of 1908, has been repaired, and certain repair works to other portions of the dam are in progress.

On the Trent canal, the surveys of alternative routes for the northern portion of the canal, carried on by Mr. E. J. Walsh, C.E., have been completed, together with the estimates of cost, namely, those from Lake Simcoe and Lake Couchiching via the River Nottawasaga, the River Severn and Cold Water, respectively; also general plans and profiles of the route from Kempenfeldt bay, Lake Simcoe, to the Georgian bay, via the River Nottawasaga.

The length of the canal in operation during the year was 160 miles, extending from Lake Simcoe to Healy Falls, a point 16 miles below the village of Hastings; no further extent of canal being ready for operation during the year.

The work of water conservation through the dams on the various tributary streams, acquired from the Ontario government, has been considerable, many of these dams being rebuilt or repaired. Notwithstanding the dryness of the season, which affected the water supply towards its close, no serious detriment to navigation was experienced.

Canal construction works have been carried on during the year. A new lock and dam are being built at Rosedale between Lake Balsam and Lake Cameron, to take the place of the present old wooden lock. A new dam was completed at the lower end of Little Bob river on the Bobeaygeon section, and a new dam and bridge at Buckhorn; a new lock and a dam at Lindsay have been placed under contract. The work on the Holland river division is in progress. It comprises the construction of three locks.

SESSIONAL PAPER No. 20

On the Ontario-Rice Lake division, which extends from Rice Lake to Trenton, Lake Ontario, a distance of 56 miles, five out of the seven sections into which it has been divided are under contract. The fall between the two lakes is 369 feet, to be overcome by the construction of a number of locks and dams, involving heavy work. Details of the work done will be found in the report of the Superintending Engineer in the appendices herewith.

On the River St. Lawrence canals, certain excavation work has been carried on for the improvement of the channel in the river west of the upper entrance of the Galops canal. The north channel in the river above the canal was satisfactorily completed, the bottom being swept, and all obstructions remaining removed.

On June 23, 1908, a very serious break occurred in the south bank of the Cornwall canal at the point where the Ottawa and New York Ry. crosses the canal. About 200 feet of the bank was carried away, and the railway swing bridge was destroyed. Immediate steps were taken by temporary works to restore navigation, and by the cutting of a diversion, the canal was reopened after a stoppage of 17 days. The permanent works of repair were placed under contract, and expeditiously carried on by day and night, in order to ensure completion by the opening of navigation in the season of 1909.

Heavy stone protection has been placed along the outer banks of certain portions of the Williamsburg canals, and this protection work will be extended.

On the Welland canal, the landslides on the summit level have been removed and various improvements have been carried out, to the benefit of navigation; the effect being that the smaller type of vessel can now pass through the canal in nine hours, and the larger vessels, which are nearly the size of the locks, in from 12 to 16 hours.

Two cases of accident through the carrying away of lock gates by passing vessels occurred.

The grain elevator built by the department at the Port Colborne entrance to the canal was sufficiently completed in September, 1908, to admit of its use, and in that month a cargo of grain was unloaded into the elevator.

With a view to providing information in the event of the question coming up as to the enlargement of the Welland canal, surveys are in progress in order to ascertain the most desirable route.

On the Sault Ste. Marie canal, the work of deepening to 21 feet 5 inches at low water stage the upper entrance to the canal, and widening it, has been satisfactorily carried on, both the easterly and westerly sections being now completed, leaving the portion—the middle section—through the Vidal shoal, about two miles above the lock, still unfinished; the north half, which comprised the principal part of the widening to 500 feet, was completed and opened to navigation; the south half is progressing to such effect as to give the expectation that the whole will be completed during the season of 1909.

An extension of 40 feet has been made to the westerly end of the new south side concrete pier.

On several occasions, the south upper entrance pier has been struck by passing vessels, to their serious injury, but without any important damages to the pier.

On the Rideau canal, the spring freshets in 1908, together with the movement of heavy ice, resulted in considerable damage to several of the canal works; which were, however, temporarily repaired, so that navigation was not delayed, and all the damaged

9-10 EDWARD VII., A. 1910

structures have since been permanently repaired. The greatest damage was caused at Black Rapids, and here, during the past winter, a new and substantial dam has been built below the old one, so designed as to minimize the risk of future damage.

Details of the several works of canal construction and repairs together with information as to the depth of water available will be found in the appendices, Part VI.

GENERAL OBSERVATIONS.

The Act of 1907, chap 23, establishing a fund to be known as 'The Intercolonial and Prince Edward Island Railway Employees' Provident Fund' came into effect on April 1, 1907. The main feature is that a contribution of $1\frac{1}{2}$ per cent of each month's salary and wages will be made by each employee to the fund, to which a like amount will be added by the railway. Interest at 3 per cent per annum will be allowed on the employee's contribution. On retirement, after a certain length of service, the employee will receive for the rest of his life a monthly allowance for each year of his service, equal to $1\frac{1}{2}$ per cent of his average monthly salary or wages for the preceding eight years; the minimum allowance to be \$20 a month, and the maximum $\frac{2}{3}$ of his said average monthly pay. The fund is administered by a board of five persons, the general manager, two others approved by the minister and selected from the chief officers of the railway, and the remaining two elected annually by the contributing employees.

The report of the Board, which will be found in the appendices hereto, shows that on April 1, 1908, there was a credit balance of \$139,249.21; that during the past fiscal year, the contributions of the railway employees amounted to \$75,306.41, and a like contribution by the railway brought the total funds, after deducting, for refunds, \$30.32, up to a total of \$289,892.35. The total expenditure was \$69,221.92, leaving a balance of \$220,670.43. Adding to this the interest allowed on the employees' contributions, \$5,227.88, the total at the credit of the fund on March 31, 1909, was \$225,898.31. The expenditure, in the early years of the operation of the scheme, would naturally be less than the receipts; but this condition cannot be expected to continue indefinitely. However, meantime, a considerable increase of the fund at credit, year by year, will serve as a source from which to meet the larger expenditures to be looked for in the future.

In the course of the past fiscal year 88 employees were retired, and pensioned from the fund, and 11 died; leaving a total of 202 persons in enjoyment of their retiring allowance at the close of the year.

The necessity for the reconstruction of the cantilever bridge over the River St. Lawrence above Quebec, which collapsed suddenly, on August 29, 1907, called for immediate action. It was, however, felt that no steps should be taken until the fullest possible consideration had been given to the various problems arising, including those of the site to be selected—whether that of the partly demolished structure, or some other—the practicability of utilizing, to some extent, the material already provided, the design for the new work, and other important features. It was further felt that the engineers who were to deal with these problems should be men of the highest capacity and experience, and that the designing and execution of the work should be left to their mature and deliberate judgment and supervision.

SESSIONAL PAPER No. 20

Accordingly, under authority of an order in council of August 17, 1908, a special Board of Engineers was constituted, to make full examination into the questions of the site, the existing piers, the material that might be utilized, the specification to be adopted, and generally to undertake the reconstruction of the bridge.

The gentlemen selected for the purpose are the following:—Mr. H. E. Vautelet, consulting engineer, of Montreal, (chairman and chief engineer), Mr. Maurice Fitzmaurice, C.M.G., C.E., chief engineer of the London County Council, England, and Mr. Ralph Mojeski, consulting engineer, of Chicago, all engineers of high professional standing, whose names are guarantees of the most careful and able treatment of the matter, in all its bearings.

They have been provided with accommodation in Montreal, as headquarters, and with a staff of engineers and assistants of their own selection, all men of experience and aptitude.

The digest of the sworn statements of railway companies relating to their operations in Canada for the twelve months ended June 30, 1908, is prepared by the Departmental Comptroller of Statistics, and is issued as a separate report.

The traffic statistics of the Dominion canals for the season of navigation of 1907 are compiled under the direction of the same officer, and are also issued as a separate report.

I have the honour to be, sir,

Your obedient servant,

M. J. BUTLER,

Deputy Minister and Chief Engineer of Railways and Canals.

APPENDICES

PART I

STATEMENTS

OF THE

ACCOUNTANT OF THE DEPARTMENT

SHOWING

EXPENDITURE ON RAILWAYS AND ON CANALS

(INCLUDING SUBSIDIZED RAILWAYS)

FOR THE FISCAL YEAR 1908-'09

ALSO

TOTAL EXPENDITURES ON
THESE WORKS

STATEMENT showing the amount expended by the Department of Railways and Canals,
Dominion of Canada, during the Fiscal year ended March 31, 1909.

Name of Work.	Chargeable to Capital.	Chargeable to Income.	CHARGEABLE TO REVENUE.	
			Staff.	Repairs.
CANALS.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Beauharnois.....		21,758 84		
Carillon... }		68,597 35	23,085 54	10,758 01
Grenville... }				
Chambly.....	13,307 02	35,784 54	28,440 40	24,389 29
Cornwall.....	495 00	151,628 65	75,581 54	42,978 72
Lachine.....	359,041 77	143,526 35	72,049 32	82,081 39
Murray.....	126 45	20,250 61	4,720 09	3,374 82
Rideau.....		19,989 52	44,911 60	53,880 51
Sault Ste. Marie.....	42,109 63	11,453 28	15,231 79	16,462 29
Soulanges.....	17,795 79	12,363 78	32,324 20	34,802 37
Ste. Anne.....		199 67	2,292 19	4,290 57
St. Lawrence.. { North Channel.....	42,770 45			
{ Removal of shoals upper				
{ entrance Galops Canal.....	25,378 21			
St. Ours.....			2,994 78	3,693 19
St. Peter's.....			3,282 22	532 78
Trent.....	1,099,836 38	80,517 65	32,028 57	44,849 83
Welland.....	255,986 16	129,489 99	115,934 78	88,409 53
Williamsburg. { District office.....	5,402 19			
{ Galops.....	6,585 40	3,744 50	22,638 02	23,454 80
Total.....	1,868,834 45	699,304 73	475,515 04	433,958 10
GENERAL ON CANALS.				
Dredge vessels—Lachine.....				8,591 51
" Rideau.....				11,791 70
Miscellaneous.....		1,113 56	1,750 86	291 70
Salaries and contingencies, canal officers.....			33,156 59	
Sunday labour.....			31,789 10	
Surveys and inspections.....		2,243 52		
{ Maintenance.....			18,694 41	
{ Remarking boundaries.....		6,993 79		
Quebec Canals.. { Dredging.....		18,468 67		
{ Steam roller and stone				
{ crusher.....	5,031 00			
Total.....	5,034 00	28,819 54	85,390 96	20,674 91
RAILWAYS.				
Intercolonial.....	3,867,232 16		9,328,021 55	
National Transcontinental.....	24,892,422 68			
Prince Edward Island.....	561,206 90		400,330 41	
Windsor Branch.....			36,234 55	
Canadian Pacific.....	937 77			
Total.....	29,321,799 51		9,764,586 51	

NOTE.—Up to and including the year 1906, the fiscal year ended June 30th, after which it ends March 31st.

6-10 EDWARD VII., A. 1910

STATEMENT showing the amount expended by the Department of Railways and Canals,
 &c.—*Concluded.*

Name of Work.	Chargeable to Capital.	Chargeable to Income.	CHARGEABLE TO REVENUE.	
			Staff.	Repairs.
GENERAL ON RAILWAYS.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Contribution to McGill College.....		2,500 00		
Railway Statistics.....		1,340 79		
Railway Subsidies.....		1,785,887 39		
Governor General's car.....		1,345 19		
Railway Commission maintenance.....		97,470 01		
" " Statutory.....		39,499 16		
Subscription to Railway Congress, Brussels..		97 33		
Surveys and Inspections.....		22,160 26		
Government Director Grand Trunk Pac. Ry..		2,000 00		
Inspections Grand Trunk Pac. Ry.....		13,536 50		
Hudson Bay Railway Surveys.....	92,427 83			
Quebec Bridge—				
Commission.....		31,765 44		
Preparing plans for reconstruction.....		35,822 61		
To pay stockholders (Quebec Bridge Co'y ..		355,279 07		
Gratuity to widow of late Judge Killam,				
Chairman Railway Commission.....		1,666 66		
Total.....	92,427 83	2,390,370 41		
MISCELLANEOUS				
Cost of litigation.....		3,057 61		
Salaries of engineers, draughtsmen, &c ..		16,071 53		
" extra clerks, &c.....		1,782 90		
Total.....		20,912 04		
RECAPITULATION.				
Total on canals.....	1,868,834 45	699,304 73	475,515 04	433,958 10
" " general.....	5,034 00	28,819 54	85,399 96	20,674 91
Total on canals.....	1,873,868 45	728,124 27	560,906 00	454,633 01
Grand total canals, \$3,617,531.73 .				
Total on railways.....	29,321,799 51			
" " general.....	92,427 83	2,390,370 41	9,764,586 51	
Total on railways.....	29,414,227 34	2,390,370 41	9,764,586 51	
Grand total railways, \$41,569,184.26				
Grand totals railways and canals, including miscellaneous, \$20,912.04.....	31,288,095 79	3,139,406 72	10,325,492 51	454,633 01

Total amount of expenditure, \$45,207,628.03.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
 OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing the amount expended on Construction, Renewals, Ordinary Repairs and Working Staff of the Canals of the Dominion of Canada, up to March 31, 1909.

ST. PETER'S CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation	.....	156,523 32	.....	.....	.....
since	1868	21,519 72	.....	.....	.....
"	1869	79,719 80	.....	.....	.....
"	1870	.....	46,193 57	.....	.....
"	1871	.....	.....	225 36	555 78
"	1872	.....	.....	280 00	6,122 07
"	1873	.....	.....	343 32	6,539 58
"	1874	.....	.....	725 93	1,558 57
"	1875	20 97	.....	560 00	889 35
"	1876	11,125 00	.....	641 55	.....
"	1877	63,330 18	.....	600 00	17 45
"	1878	26,511 51	.....	600 00	.....
"	1879	107,337 75	.....	631 50	.....
"	1880	80,120 54	.....	400 00	.....
"	1881	69,434 76	.....	959 58	.....
"	1882	484 00	.....	1,920 54	200 63
"	1883	.....	.....	2,089 19	232 42
"	1884	2,471 40	.....	2,601 47	367 85
"	1885	16,820 15	.....	1,929 11	183 11
"	1886	2,316 85	.....	2,360 67	297 81
"	1887	1,087 75	750 00	2,777 13	343 23
"	1888	.....	.....	3,217 77	1,588 40
"	1889	.....	500 00	3,085 29	353 38
"	1890	.....	.....	3,110 15	255 34
"	1891	972 65	510 53	3,255 30	312 02
"	1892	14,387 00	30,936 82	3,007 70	1,461 24
"	1893	811 59	9,987 78	2,938 15	1,856 30
"	1894	437 05	3,852 21	2,935 94	1,986 70
"	1895	868 44	26,222 46	2,499 81	353 55
"	1896	1,455 21	16,743 64	2,182 04	260 90
"	1897	.....	.....	2,728 38	1 20
"	1898	.....	111 70	2,785 25	453 85
"	1899	.....	.....	2,819 86	456 61
"	1900	.....	.....	2,833 24	1,483 30
"	1901	.....	2,311 26	2,730 44	841 63
"	1902	.....	10,014 43	2,939 81	274 44
"	1903	.....	.....	2,836 49	764 11
"	1904	.....	.....	3,126 94	122 45
"	1905	.....	3,000 10	2,969 90	1,095 90
"	1906	.....	.....	3,239 19	253 65
"	1907	.....	.....	2,468 78	246 87
"	1908	.....	.....	3,371 13	942 64
"	1909	.....	.....	3,282 22	532 78
Less—Refunds in 1897 \$.	.....	648,755 64 208 50	.....	.....	.....
Total	.....	648,547 14	151,134 50	81,009 13	33,205 11

* Expenditure as above \$ 648,547 14

Less expenditure prior to Confederation..... 156,523 32

Agreeing with Public Accounts, 1909, page 4..... \$ 492,023 82

W. C. LITTLE,

Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

BEAUHARNOIS CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation		1,611,424 11			
" since	"				
" " "	1868		63,193 75	9,349 99	6,216 98
" " "	1869		55 00	9,626 99	6,498 57
" " "	1870		27 50	10,117 57	6,384 81
" " "	1871			12,316 53	5,722 36
" " "	1872		27 50	11,792 46	15,733 38
" " "	1873		5,122 50	12,210 73	9,882 06
" " "	1874		26 00	15,392 51	10,990 56
" " "	1875		36 00	14,399 32	12,253 01
" " "	1876			14,465 86	17,170 83
" " "	1877			14,377 63	15,207 36
" " "	1878			14,383 37	9,861 05
" " "	1879			15,015 86	10,370 71
" " "	1880	266 15		15,362 61	8,997 34
" " "	1881			17,659 93	10,770 67
" " "	1882			18,894 53	20,813 86
" " "	1883		6,727 44	18,287 77	15,826 71
" " "	1884		3,277 98	19,107 38	16,232 61
" " "	1885		7,999 79	18,960 40	14,637 70
" " "	1886		8,491 80	19,228 90	14,356 00
" " "	1887		3,633 57	18,867 45	14,999 88
" " "	1888		14,411 97	19,325 05	14,285 98
" " "	1889		10,993 52	20,019 11	14,982 54
" " "	1890			19,847 42	14,999 20
" " "	1891		17,085 68	18,886 86	12,537 39
" " "	1892		1,696 23	20,050 01	14,999 80
" " "	1893			20,348 34	14,107 11
" " "	1894		6,547 72	20,574 53	13,903 46
" " "	1895		27,982 93	20,428 59	12,299 49
" " "	1896			20,725 47	15,050 85
" " "	1897		9,813 15	21,012 64	14,862 98
" " "	1898	25,000 00	5,799 31	20,650 00	16,164 92
" " "	1899		1,000 00	20,613 22	13,463 01
" " "	1900		4,959 22	20,147 59	14,505 30
" " "	1901		483 40	20,118 42	14,199 12
" " "	1902			16,682 52	6,532 33
" " "	1903			8,218 14	10,063 38
" " "	1904			9,236 27	11,936 37
" " "	1905		14,949 83	9,086 68	10,499 99
" " "	1906		2,531 24	9,291 91	18,640 71
" " "	1907		598 64	7,552 02	11,711 09
" " "	1908		2,260 81	7,032 31	13,019 76
" " "	1909		21,758 84		
Total		1,636,690 26	241,491 35	649,574 89	525,691 23

* See page 37 for total cost of St. Lawrence River and Canals.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

ST. LAWRENCE RIVER AND CANALS, SURVEYS, &c.

	Year ending.	CHARGEABLE TO CAPITAL.				Chargeable to Income.
		North Channel.	River Reaches.	Galops Channel.	Total.	
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation.....					18,442 85	98,378 46
Government expenditure since Confederation.....	1868					
" " " " " "	1869					
" " " " " "	1870					
" " " " " "	1871					
" " " " " "	1872					
" " " " " "	1873				33,241 69	
" " " " " "	1874				26,541 30	
" " " " " "	1875				20,611 36	
" " " " " "	1876				50,215 47	
" " " " " "	1877				47,377 31	
" " " " " "	1878				5,570 46	
" " " " " "	1879				9,265 77	
" " " " " "	1880				9,214 56	
" " " " " "	1881				6,927 96	
" " " " " "	1882		6,933 45	22,000 00	28,933 45	
" " " " " "	1883		3,574 31	41,300 00	44,874 31	
" " " " " "	1884		15,546 03	74,300 00	89,846 03	
" " " " " "	1885		13,710 17	101,400 00	115,110 17	
" " " " " "	1886		16,251 73	99,800 00	116,051 73	
" " " " " "	1887		20,037 31	54,400 00	74,437 31	
" " " " " "	1888		16,082 85	40,400 00	56,482 85	
" " " " " "	1889		1,293 92	17,200 00	18,493 92	
" " " " " "	1890		18,279 91	5,700 00	23,979 91	
" " " " " "	1891		35,137 25		35,137 25	
" " " " " "	1892		59,779 31		59,779 31	
" " " " " "	1893		52,643 39		52,643 39	
" " " " " "	1894		13,721 66		13,721 66	
" " " " " "	1895		1,223 72	181,552 03	182,775 75	
" " " " " "	1896		7,457 05		7,457 05	
" " " " " "	1897		12,347 31		12,347 31	
" " " " " "	1898	171,336 65	7,491 11	32,710 00	211,537 76	
" " " " " "	1899	461,979 50	9,366 47	42,430 00	513,775 97	
" " " " " "	1900	225,000 00	72,484 41	50,000 00	347,484 41	
" " " " " "	1901	184,790 34	19,389 75	91,211 97	295,392 06	
" " " " " "	1902	125,000 00	29,268 64	24,037 85	178,306 49	
" " " " " "	1903	126,833 91	16,432 28	25,000 00	168,266 22	
" " " " " "	1904	68,595 42	9,634 66	6,450 00	84,680 08	
" " " " " "	1905	93,025 89	25,743 51	49,734 70	168,504 10	
" " " " " "	1906	83,028 98		26,506 26	109,535 24	
" " " " " "	1907	61,528 34		13,350 00	74,878 34	
" " " " " "	1908	40,500 00		12,976 77	53,476 77	
" " " " " "	1909	42,770 45		25,378 21	68,148 66	
Total.....		1,684,389 51	483,830 20	1,037,837 79	3,433,466 23*	98,378 46

* In this total is included an expenditure on capital account of \$227,408.73 on the St. Lawrence River and Canals for the period previous to 1882.

ST. LAWRENCE RIVER AND CANALS, SURVEYS, &c.

St. Lawrence River and Canals, as above.....	\$ 3,433,466 23
Beauharnois Canal, <i>see</i> page 36.....	1,636,690 26
Cornwall Canal " 40.....	7,231,677 60
Williamsburg Canal " 42.....	10,485,611 69
Lake St. Louis " 38.....	298,176 11
Soulanges Canal " 54.....	6,973,113 38
Lachine Canal, from prior to Confederation to June 30, 1875, <i>see</i> page 35.....	2,950,104 15
Lake St. Francis, <i>see</i> page 39.....	75,906 71

Agreeing with Public Accounts balance sheet, 1909, page 4.....\$ 33,087,746 13

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.--*Continued.*

LAKE ST. LOUIS.

	Year ending.	Chargeable to Capital.	Chargeable to Revenue.
		\$ cts.	\$ cts.
Government expenditure prior to Confederation.....	1868		
" " since " "	1869		
" " " "	1870		
" " " "	1871		
" " " "	1872		
" " " "	1873		
" " " "	1874		
" " " "	1875		
" " " "	1876		
" " " "	1877		
" " " "	1878		
" " " "	1879		
" " " "	1880		
" " " "	1881		
" " " "	1882		
" " " "	1883		
" " " "	1884		
" " " "	1885		
" " " "	1886		
" " " "	1887		
" " " "	1888		
" " " "	1889		
" " " "	1890		
" " " "	1891		
" " " "	1892		
" " " "	1893		
" " " "	1894		
" " " "	1895	4,753 14	
" " " "	1896	49,909 31	
" " " "	1897	73,300 41	
" " " "	1898	64,495 83	
" " " "	1899	57,607 79	
" " " "	1900	11,765 70	
" " " "	1901	12,918 31	
" " " "	1902	6,000 00	
" " " "	1903	9,508 72	
" " " "	1904	7,916 90	
" " " "	1905	†	
" " " "	1906	†	
" " " "	1907	†	
" " " "	1908	†	
" " " "	1909	†	
Total.		*298,176 11	

* Included in total cost of St. Lawrence River and Canals, *see* page 37.
† Transferred to Department of Marine and Fisheries in 1905.

W. C. LITTLE,
Accountant.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

LAKE ST. FRANCIS.

					Year ending.	Capital.	Renewals Chargeable to Income.
						\$ cts.	\$ cts.
Government expenditure since Confederation					1868		
"	"	"	"	"	1869		
"	"	"	"	"	1870		
"	"	"	"	"	1871		
"	"	"	"	"	1872		
"	"	"	"	"	1873		
"	"	"	"	"	1874		
"	"	"	"	"	1875		
"	"	"	"	"	1876		
"	"	"	"	"	1877		
"	"	"	"	"	1878		
"	"	"	"	"	1879		
"	"	"	"	"	1880		
"	"	"	"	"	1881		
"	"	"	"	"	1882		
"	"	"	"	"	1883		
"	"	"	"	"	1884		
"	"	"	"	"	1885		
"	"	"	"	"	1886		
"	"	"	"	"	1887		
"	"	"	"	"	1888		
"	"	"	"	"	1889		
"	"	"	"	"	1890		
"	"	"	"	"	1891		
"	"	"	"	"	1892		
"	"	"	"	"	1893		
"	"	"	"	"	1894		
"	"	"	"	"	1895		
"	"	"	"	"	1896		
"	"	"	"	"	1897		
"	"	"	"	"	1898	3,420 00	
"	"	"	"	"	1899	23,110 00	
"	"	"	"	"	1900	15,431 46	12,288 39
"	"	"	"	"	1901	15,000 00	8,060 30
"	"	"	"	"	1902	13,945 25	
"	"	"	"	"	1903	5,000 00	
"	"	"	"	"	1904		2,199 52
"	"	"	"	"	1905	†	
"	"	"	"	"	1906	†	
"	"	"	"	"	1907	†	
"	"	"	"	"	1908	†	
"	"	"	"	"	1909	†	
Total.....						*75,906 71	22,548 21

* Included in total cost of St. Lawrence River and Canals, *see* page 37.

† Transferred to Department of Marine and Fisheries in 1905.

W. C. LITTLE,

*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

CORNWALL CANAL.

	Year ending.	Chargeable to Capital.		Renewals Chargeable to Income.	Staff.	Repairs.		
		\$	cts.	\$	cts.	\$	cts.	
Government expenditure prior to Confederation.....		1,933,152	69					
Government expenditure since Confederation.....	1868			2,786	00	11,244	47	
" " ..	1869	10,692	04			10,347	91	
" " ..	1870			17,780	05	10,368	16	
" " ..	1871			7	50	11,848	39	
" " ..	1872			10,000	21	10,594	30	
" " ..	1873			1,011	75	13,042	25	
" " ..	1874					13,405	20	
" " ..	1875	1,780	00			13,351	91	
Cost of original construction...			1,945,624	73				
Expenditure by Dominion Gov- ernment.....	1876					13,320	61	
" " ..	1877	49,211	37			13,375	70	
" " ..	1878	145,015	45			13,825	50	
" " ..	1879	143,092	05			13,817	96	
" " ..	1880	109,454	95			14,440	33	
" " ..	1881	53,948	14			15,173	60	
" " ..	1882	44,587	61			15,052	20	
" " ..	1883	21,728	93			18,283	67	
" " ..	1884	22,018	13			18,475	48	
" " ..	1885	62,034	90	16,298	96	15,988	96	
" " ..	1886	57,820	83	6,960	95	15,994	80	
" " ..	1887	46,966	43			17,520	54	
" " ..	1888	67,945	74			16,938	54	
" " ..	1889	163,993	85			17,890	55	
" " ..	1890	365,038	01	2,000	00	17,063	49	
" " ..	1891	599,001	85	1,459	98	16,077	72	
" " ..	1892	398,555	25	2,345	26	15,596	66	
" " ..	1893	352,536	13			15,173	01	
" " ..	1894	404,990	22			15,344	02	
" " ..	1895	450,689	65	21,497	74	15,414	56	
" " ..	1896	448,408	31	2,175	00	15,472	26	
" " ..	1897	438,487	51			15,540	43	
" " ..	1898	133,208	96			15,011	50	
" " ..	1899	37,649	00	15,960	80	16,000	00	
" " ..	1900	169,889	51	18,547	50	18,798	10	
" " ..	1901	62,032	47			17,104	13	
" " ..	1902	90,535	18			17,896	58	
" " ..	1903	77,833	81			70,129	29	
" " ..	1904	113,795	16	1,730	16	45,792	64	
" " ..	1905	104,093	45	8,324	83	71,073	68	
" " ..	1906	37,879	09	20,063	79	71,246	77	
" " ..	1907	5,218	03	4,191	61	52,050	56	
" " ..	1908	9,897	90	11,270	83	73,651	90	
" " ..	1909	495	00	151,628	65	75,581	54	
Cost of enlargement.....			5,289,052	87				
Total			7,234,677	60	316,041	57	984,319	87
							609,686	10

* Included in total cost of St. Lawrence River and Canals, see page 37.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, JULY 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*
 WILLIAMSBURG CANALS.

	Year ending.	CAPITAL.				Renewals Chargeable to Income.	Staff.	Repairs.
		Farran's Point.	Galops.	Rapids Plat.	Total.			
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation being amount of original construction	1868				1,329,655 54		5,745 37	6,142 41
Government expenditure since Confederation	1869						5,670 88	5,670 88
"	1870						5,573 13	6,546 16
"	1871						6,382 17	5,308 41
"	1872					1,077 06	5,542 94	3,230 07
"	1873						6,424 49	7,317 75
"	1874						6,857 19	7,395 92
"	1875						7,418 39	4,110 29
"	1876						7,388 48	11,690 98
"	1877						10,053 61	7,449 78
"	1878						7,430 11	4,449 78
"	1879						7,517 20	3,549 71
"	1880						7,590 15	3,999 77
"	1881						7,572 35	5,020 73
"	1882						7,589 44	7,447 69
"	1883				13 19		7,589 39	7,299 39
"	1884				2,473 44		7,757 01	7,349 37
"	1885		70,764 07	32,473 65	103,237 12		7,696 67	8,198 03
"	1886		78,014 92	71,820 79	149,835 71		7,671 54	7,947 05
"	1887		32,862 02	82,990 98	115,853 00		7,635 54	7,904 76
"	1888		16,628 95	53,499 34	70,128 29		7,646 79	8,190 13
"	1889		37,661 15	22,206 11	59,867 26		7,485 28	8,794 61
"	1890		126,417 42	12,660 95	139,078 37		8,954 53	8,191 69
"	1891	2,853 76	172,779 88	55,036 96	230,670 60		8,678 25	7,987 40
"	1892		218,511 17	158,034 15	376,545 32		797 83	8,551 32
"	1893		154,524 01	217,669 98	372,193 29		8,076 03	8,347 97
"	1894		223,902 81	274,397 42	498,300 23		10,230 09	7,029 95
"	1895		118,464 53	228,892 70	347,357 23		9,675 09	7,371 37
Carried forward		2,853 76	1,250,620 93	1,909,681 73	3,786,298 59	20,883 86	210,337 70	195,327 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—Continued.
WILLIAMSBURG CANALS—Continued.

	Year ending.	CAPITAL.					Renewals Chargeable to Income.	Staff.		Repairs.					
		Farran's Point.		Galops.		Rapid Plat.		Total.							
		\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.				
Brought forward.....		2,853	76	1,250,620	93	1,200,681	73	3,786,298	39	20,883	86	210,337	70	195,327	20
Government expenditure since Confederation.....	1896	4,980	00	150,744	16	286,396	96	442,121	12	8,607	04	9,588	51	9,036	00
"	1897	231,321	44	292,793	78	205,480	55	468,274	33	3,880	76	8,697	54	8,210	71
"	1898	346,956	54	987,186	47	116,072	55	1,081,886	06			10,708	66	8,032	84
"	1899	100,534	64	732,799	27	57,869	18	1,392,012	16	7,410	00	9,960	64	10,000	00
"	1900	111,158	39	390,112	78	14,298	74	867,632	65			11,092	06	10,897	79
"	1901	42,269	89	421,945	81	76,501	57	577,472	74			12,342	32	11,753	09
"	1902	10,266	92	320,351	92	137,818	22	601,973	92			13,403	28	13,673	26
"	1903	18,700	00	256,536	30	18,483	34	349,105	18			15,246	91	20,062	79
"	1904					26,774	27	302,010	57	1,978	85	20,570	17	19,430	05
"	1905	8,108	99	292,337	29			8,209	63			23,399	45	21,492	46
"	1906			140,920	65			308,556	26			16,118	66	16,118	66
"	1907			45,782	52			140,920	65			17,289	42	8,501	57
"	1908			100,312	81			46,537	43			13,953	58	18,563	82
"	1909							100,312	81			19,441	86	23,454	80
"								11,987	59			22,638	02		
Total.....		877,090	57	6,118,927	32	2,158,212	00	*10,485,611	69			410,670	12	394,617	04

* Original construction \$ 1,320,655 54
Cost of enlargement..... 9,164,956 15

Total.....\$10,485,611 69
Included in total cost of St. Lawrence River and Canals, page 37.

W. C. LITTLE,
Accountant.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

WELLAND CANAL.

	Year ending,	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Imperial Government.....		222,220 00			
Government expenditure prior to Confederation.....		7,416,019 83			
" since ".....	1868	12,097 84		37,679 05	38,852 96
" " ".....	1869	43,486 36		39,060 61	50,773 03
" " ".....	1870		22,173 72	40,340 45	65,009 19
" " ".....	1871		48,569 10	42,383 33	53,381 02
" " ".....	1872	53,680 32	6,022 44	37,085 37	50,276 90
" " ".....	1873	82,282 20	47,876 27	45,382 99	66,550 73
" " ".....	1874	746,420 61		50,966 48	103,666 99
" " ".....	1875	1,047,119 91		52,595 00	88,539 99
" " ".....	1876	1,569,478 19	700 00	57,623 31	81,376 12
" " ".....	1877	2,199,962 61		59,963 47	49,783 93
" " ".....	1878	2,138,392 99		60,138 59	66,393 53
" " ".....	1879	1,552,697 41		59,912 23	56,755 57
" " ".....	1880	1,252,924 75		63,198 10	76,535 25
" " ".....	1881	1,242,943 37	6,593 19	56,398 04	69,249 53
" " ".....	1882	603,402 17	13,664 80	74,641 51	84,374 97
" " ".....	1883	549,433 29	5,979 03	109,207 21	72,707 62
" " ".....	1884	432,336 21		113,276 87	90,926 97
" " ".....	1885	463,505 38	6,150 21	112,670 00	91,534 66
" " ".....	1886	215,380 75	1,359 00	111,660 22	69,507 48
" " ".....	1887	1,071,073 87	3,828 67	109,371 69	77,440 80
" " ".....	1888	429,720 94	10,740 86	110,806 01	86,518 97
" " ".....	1889	225,910 21	43,803 80	113,587 05	77,547 77
" " ".....	1890	117,633 22	51,648 28	109,202 02	72,686 19
" " ".....	1891	36,371 03	19,767 73	107,662 63	82,548 30
" " ".....	1892	29,541 21	9,008 80	104,673 73	73,771 87
" " ".....	1893	8,259 94	25,103 13	104,926 73	65,016 84
" " ".....	1894	1,571 78	13,430 20	102,048 80	53,053 71
" " ".....	1895	3,809 35	24,245 02	90,438 07	48,270 94
" " ".....	1896	1,677 67	18,768 99	87,988 11	62,542 64
" " ".....	1897	2,282 35	22,283 06	88,095 20	41,247 81
" " ".....	1898		34,803 25	84,806 54	59,571 66
" " ".....	1899		30,099 84	86,110 88	56,270 60
" " ".....	1900	18,167 29	37,164 84	84,888 36	59,507 64
" " ".....	1901	224,536 96	87,777 43	86,889 24	72,055 89
" " ".....	1902	363,997 81	78,905 37	88,048 95	69,279 90
" " ".....	1903	315,819 49	94,127 21	90,684 05	72,004 59
" " ".....	1904	555,751 00	31,140 58	91,115 35	85,717 88
" " ".....	1905	890,457 82	34,559 42	91,928 96	111,418 62
" " ".....	1906	715,198 24	28,799 66	107,932 96	78,704 93
" " ".....	1907	480,305 03	56,036 47	75,031 24	53,247 50
" " ".....	1908	896,760 46	138,430 19	108,101 56	78,460 40
" " ".....	1909	255,986 16	129,489 99	115,934 78	88,409 53
Total		28,338,616 02	1,283,050 55	3,464,455 74	2,951,491 42

* Total expenditure as above..... \$ 28,338,616 02
Less expenditure by Imperial Government..... 222,220 00

Agreeing with Public Accounts Balance Sheet, 1999, page 4....\$ 28,116,396 02

Original cost of construction, including first enlargement.....\$ 7,693,824 03
Enlargement, including new Welland Canal..... 20,644,791 99

Total expenditure as above.....\$ 28,338,616 02

W. C. LITTLE,
Accountant.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended in Construction, Renewals, &c.—*Continued.*

STE. ANNE'S LOCK AND CANAL.

—			Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
				\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation				134,456 51			
"	since	"	1868			778 16	432 47
"	"	"	1869			1,062 96	1,873 51
"	"	"	1870			1,136 54	1,280 36
"	"	"	1871			1,285 84	1,539 02
"	"	"	1872		1,939 46	1,106 80	1,393 63
"	"	"	1873		540 11	2,199 64	1,264 40
"	"	"	1874	12,753 27		2,614 90	7,208 63
"	"	"	1875	32,627 71		1,859 20	4,506 68
"	"	"	1876	24,935 85		1,952 14	4,033 72
"	"	"	1877	30,003 08		1,982 65	1,756 93
"	"	"	1878	14,618 85		2,057 32	541 95
"	"	"	1879	22,113 02		2,202 03	3,259 70
"	"	"	1880	3,054 68		2,152 57	1,704 71
"	"	"	1881	69,042 76		2,553 02	3,257 92
"	"	"	1882	193,158 36		2,611 30	2,343 99
"	"	"	1883	172,959 95		2,569 86	3,448 83
"	"	"	1884	142,006 25		2,775 32	2,725 49
"	"	"	1885	93,679 57		2,618 60	4,042 04
"	"	"	1886	129,681 67		2,611 90	5,803 01
"	"	"	1887	45,276 08	6,054 10	2,537 41	1,499 96
"	"	"	1888	18,910 55	1,372 59	2,505 61	1,380 75
"	"	"	1889	24,786 33		2,569 22	1,730 79
"	"	"	1890	6,151 14		2,571 04	1,525 51
"	"	"	1891		8,173 69	2,505 69	1,503 56
"	"	"	1892		25,471 61	2,571 28	1,666 21
"	"	"	1893		6,521 88	2,581 08	2,800 03
"	"	"	1894		3,497 56	2,640 00	2,799 63
"	"	"	1895		3,694 33	2,508 14	3,025 91
"	"	"	1896			2,495 54	4,993 89
"	"	"	1897			2,357 51	1,688 12
"	"	"	1898			1,904 10	1,699 44
"	"	"	1899			1,920 12	1,997 96
"	"	"	1900			1,840 51	2,679 21
"	"	"	1901			1,895 89	3,999 02
"	"	"	1902			1,994 52	3,015 97
"	"	"	1903		1,984 39	2,072 17	4,684 42
"	"	"	1904			2,292 94	2,244 13
"	"	"	1905			2,151 01	6,091 44
"	"	"	1906			2,259 16	2,294 86
"	"	"	1907		2,449 96	1,595 62	991 47
"	"	"	1908		2,501 42	2,248 29	1,693 63
"	"	"	1909		199 67	2,292 19	4,290 57
Total.....				*1,170,215 63	64,400 77	90,439 79	112,623 47

* Included in total cost of Ottawa River Works, see page 47.

Original Construction.....	\$ 134,456 51
Enlargement, including new lock.....	1,035,759 12
	<u>\$ 1,170,215 63</u>

W. C. LITTLE,
Accountant.

SESSIONAL PAPER No. 20

STATEMENT showing the amount expended on Construction, Renewals, &c.—*Continued.*

CARILLON AND GRENVILLE CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Imperial Government.....		*			
Government expenditure prior to Confederation.....		63,073 64			
" " since " " 1868.....	1868		19,817 22	6,301 88	8,911 28
" " " " 1869.....	1869			6,549 38	10,157 42
" " " " 1870.....	1870		4,167 96	6,617 81	9,852 09
" " " " 1871.....	1871		23,119 37	8,676 90	8,218 24
" " " " 1872.....	1872	165,257 28		8,324 51	17,235 31
" " " " 1873.....	1873	133,199 10	3,051 38	10,068 28	8,781 50
" " " " 1874.....	1874	245,258 38		10,710 88	10,605 82
" " " " 1875.....	1875	339,864 76		10,378 57	18,520 44
" " " " 1876.....	1876	326,203 16		10,764 38	11,475 96
" " " " 1877.....	1877	245,738 01		11,050 27	10,304 06
" " " " 1878.....	1878	22,676 20		11,401 30	5,082 72
" " " " 1879.....	1879	243,141 24		11,501 22	7,629 98
" " " " 1880.....	1880	281,514 27		11,959 14	7,625 54
" " " " 1881.....	1881	336,707 53		13,059 18	8,076 91
" " " " 1882.....	1882	433,084 39		14,387 49	7,582 68
" " " " 1883.....	1883	433,575 10		17,479 58	8,310 02
" " " " 1884.....	1884	399,267 16		17,393 91	7,918 42
" " " " 1885.....	1885	157,187 72		19,702 30	10,429 26
" " " " 1886.....	1886	104,973 24	75 00	20,597 82	9,303 31
" " " " 1887.....	1887	20,747 11		20,011 36	19,554 41
" " " " 1888.....	1888	38,996 29		21,531 12	10,036 62
" " " " 1889.....	1889	298 17		22,098 88	10,135 66
" " " " 1890.....	1890	17 58	4,526 61	15,896 16	7,582 38
" " " " 1891.....	1891		4,395 25	21,230 22	10,796 68
" " " " 1892.....	1892	34,585 64	15,036 48	17,458 69	8,620 15
" " " " 1893.....	1893	297 00	42,298 74	16,762 71	10,669 28
" " " " 1894.....	1894	385 55	20,034 94	14,144 98	11,620 09
" " " " 1895.....	1895		5,963 76	15,453 21	12,303 25
" " " " 1896.....	1896	3,850 31		13,995 69	12,161 10
" " " " 1897.....	1897	1,908 41	4,939 20	13,780 29	11,607 95
" " " " 1898.....	1898	82,663 37	5,082 03	11,697 81	10,993 61
" " " " 1899.....	1899	39,999 37		11,919 27	11,478 88
" " " " 1900.....	1900	22,802 27	4,476 50	13,657 06	14,666 71
" " " " 1901.....	1901	4,930 65	9,331 95	13,342 22	13,416 00
" " " " 1902.....	1902		16,998 69	13,725 99	19,366 30
" " " " 1903.....	1903		15,992 52	14,348 17	17,766 28
" " " " 1904.....	1904		9,150 07	16,224 94	17,262 29
" " " " 1905.....	1905		8,715 46	15,858 19	19,977 19
" " " " 1906.....	1906		24,179 33	18,232 71	10,924 72
" " " " 1907.....	1907		9,393 38	16,749 03	7,036 40
" " " " 1908.....	1908		1,387 35	23,019 45	9,775 35
" " " " 1909.....	1909		68,597 35	23,085 54	10,758 01
Total.....		\$4,182,092 96	320,730 51	611,148 49	465,530 27

* Expenditure not given—records relating to same were kept in Ordnance Office at Montreal and were destroyed by fire in 1852.

† Included in total cost of Ottawa River Works, see page 47. Cost of enlargement, \$4,119,039.32.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amount expended on Construction, Renewals, &c.— *Continued.*

CULBUTE LOCK AND DAM.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure since Confederation.	1868	.....	.....	.....	.....
" " " "	1869	.....	.....	.....	.....
" " " "	1870	.....	.....	.....	.....
" " " "	1871	.....	.....	.....	.....
" " " "	1872	.....	.....	.....	.....
" " " "	1873	.....	835 53	.....	.....
" " " "	1874	.....	38,388 99	.....	.....
" " " "	1875	63,659 29	.....	.....	.....
" " " "	1876	76,842 44	.....	.....	.....
" " " "	1877	56,081 87	.....	.....	.....
" " " "	1878	5,933 53	.....	.....	.....
" " " "	1879	20,694 19	.....	.....	.....
" " " "	1880	16,688 20	.....	202 50	259 31
" " " "	1881	4,721 62	.....	962 85	.....
" " " "	1882	29,567 15	.....	790 00	162 33
" " " "	1883	14,249 60	.....	695 00	288 99
" " " "	1884	8,151 16	.....	733 50	.....
" " " "	1885	19,071 76	.....	730 00	572 75
" " " "	1886	26,385 27	.....	730 00	2,396 14
" " " "	1887	7,760 88	.....	730 00	967 33
" " " "	1888	7,573 99	.....	739 50	730 60
" " " "	1889	17,112 01	.....	1,050 00	116 53
" " " "	1890	2,818 35	.....	747 83	.....
" " " "	1891	2,183 15	9,122 05	745 25	499 91
" " " "	1892	.....	1,546 25	736 00	.....
" " " "	1893	.....	1,420 65	749 00	13 55
" " " "	1894	.....	2,540 14	730 00	494 43
" " " "	1895	.....	1,475 26	436 05	434 28
" " " "	1896	.....	.....	.....	.....
" " " "	1897	.....	.....	.....	.....
" " " "	1898	.....	.....	.....	100 00
" " " "	1899	.....	.....	.....	.....
" " " "	1900	3,085 60	.....	.....	.....
" " " "	1901	197 00	.....	.....	.....
" " " "	1902	.....	1,135 00	.....	.....
" " " "	1903	.....	.....	.....	.....
" " " "	1904	.....	2,204 50	.....	.....
" " " "	1905	.....	2,255 00	.....	.....
" " " "	1906	.....	.....	.....	.....
" " " "	1907	.....	.....	.....	.....
" " " "	1908	.....	.....	.....	.....
" " " "	1909	.....	.....	.....	.....
Total	.....	*382,776 46	60,923 37	11,507 48	7,036 15

* Included in total cost of Ottawa River Works, see page 47.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*
 RIDEAU CANAL.

W. C. LITTLE,
Accountant.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

ST. OURS LOCK.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation	1868	121,537 65		1,532 75	753 74
" " since	1869			1,755 15	1,399 18
" " "	1870			1,458 09	1,006 22
" " "	1871			1,414 48	1,210 98
" " "	1872			1,565 80	1,263 19
" " "	1873			2,076 50	1,575 10
" " "	1874			2,219 13	2,363 42
" " "	1875			1,362 22	1,245 69
" " "	1876			1,403 92	1,601 71
" " "	1877			1,533 40	750 80
" " "	1878			1,556 65	283 77
" " "	1879			1,581 55	456 07
" " "	1880			1,614 01	705 54
" " "	1881			1,741 97	1,299 77
" " "	1882			2,002 71	1,902 41
" " "	1883		17,230 32	2,361 65	2,188 08
" " "	1884		5,279 17	2,315 37	1,494 99
" " "	1885		4,700 64	2,271 57	3,652 63
" " "	1886			2,311 70	4,143 47
" " "	1887			2,175 37	5,864 78
" " "	1888			2,216 04	2,801 17
" " "	1889		17,964 45	2,421 14	2,002 63
" " "	1890		24,571 96	2,138 40	1,935 44
" " "	1891		21,696 74	2,011 08	4,460 16
" " "	1892		3,585 34	2,168 44	1,944 33
" " "	1893			2,136 66	1,994 34
" " "	1894			2,216 68	924 55
" " "	1895			2,161 63	915 50
" " "	1896			2,094 91	1,678 49
" " "	1897			2,135 60	707 06
" " "	1898			2,049 67	692 04
" " "	1899			2,244 12	1 494 93
" " "	1900		1,596 88	2,181 43	2,681 10
" " "	1901		3,610 06	2,128 25	1,681 44
" " "	1902		15,549 27	2,262 39	984 36
" " "	1903		9,344 89	2,288 63	1,671 83
" " "	1904		7,984 41	2,334 67	1,690 61
" " "	1905		14,990 90	2,479 65	1,716 35
" " "	1906		7,307 39	2,582 95	3,872 75
" " "	1907		4,200 00	2,064 62	1,142 79
" " "	1908		3,338 79	2,894 76	2,121 43
" " "	1909			2,294 78	3,693 19
Total		*121,537 65	162,861 21	85,760 50	77,968 03

* Included in the total cost of Chambly Canal and Richelieu River, *see* page 49.W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*
CHAMBLY CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation	1868	634,711 76		8,312 90	9,355 70
" since	1869			8,437 22	13,120 97
" "	1870			8,934 41	20,180 73
" "	1871		2,839 85	10,214 71	22,426 33
" "	1872		1,906 40	9,628 50	22,327 99
" "	1873		759 00	10,390 44	11,789 27
" "	1874		2,810 00	11,675 67	16,427 19
" "	1875	2,415 00		12,201 99	16,306 91
" "	1876			10,593 14	13,273 56
" "	1877	80 00		10,281 78	10,111 32
" "	1878			10,413 99	6,022 96
" "	1879			11,301 53	8,809 77
" "	1880			11,516 22	12,377 74
" "	1881			13,950 47	20,705 17
" "	1882		31,796 41	16,686 78	16,843 60
" "	1883		21,332 36	15,904 38	15,182 24
" "	1884		41,640 77	18,448 85	12,003 34
" "	1885		21,049 23	18,378 55	13,046 95
" "	1886		14,547 27	19,501 28	11,999 77
" "	1887		17,911 17	19,053 62	20,071 37
" "	1888		65,536 64	20,073 60	11,823 74
" "	1889		51,137 87	19,679 22	19,392 18
" "	1890		23,221 48	19,655 38	14,399 93
" "	1891		43,344 41	19,204 76	11,399 93
" "	1892		38,353 99	19,665 22	12,976 48
" "	1893		21,127 65	19,310 29	12,451 03
" "	1894		8,567 78	19,040 93	11,920 74
" "	1895		6,147 63	19,325 49	11,779 12
" "	1896		3,694 63	19,349 65	11,801 12
" "	1897		12,665 88	18,754 17	13,128 55
" "	1898		13,184 68	17,992 90	12,466 51
" "	1899		15,255 42	18,336 50	11,997 51
" "	1900		5,448 88	18,397 58	13,995 00
" "	1901		1,195 09	18,529 48	17,572 35
" "	1902		19,132 80	18,832 25	17,313 02
" "	1903		8,977 43	19,286 10	21,745 65
" "	1904		26,701 59	21,544 69	25,656 00
" "	1905		33,066 50	26,970 79	19,896 57
" "	1906		26,192 72	26,039 53	25,173 48
" "	1907		29,953 80	19,916 33	22,508 88
" "	1908	157 90	34,261 31	28,375 21	30,627 72
" "	1909	13,307 02	35,784 54	28,440 40	24,389 29
Less proceeds of sale of piece of land in 1898		650,671 68 150 00			
Total		*650,521 68	679,818 18	712,546 90	666,797 68

Chambly Canal and River Richelieu.

Chambly Canal, as above..... \$ 650,521 68

St. Ours Lock, see page 48..... 121,537 65

Less amount deducted at Confederation, see Public Accounts, 1868, part i, page 9..... \$ 772,059 33

Government expenditure prior to Confederation,

Chambly Canal, as above..... \$ 634,711 76

St. Ours Lock, see page 48..... 121,537 65

\$ 756,249 41

Returned as an asset in Public Accounts, 1868..... 433,807 83

322,441 58

Agreeing with Public Accounts, 1909, page 4..... \$ 449,617 75

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.W. C. LITTLE,
Accountant.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amount expended on Construction, Renewals, &c.—Continued.

MURRAY CANAL.

			Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
				\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation			1868		400 00		
"	since	"	1869				
"	"	"	1870				
"	"	"	1871				
"	"	"	1872				
"	"	"	1873				
"	"	"	1874				
"	"	"	1875				
"	"	"	1876				
"	"	"	1877				
"	"	"	1878				
"	"	"	1879				
"	"	"	1880				
"	"	"	1881				
"	"	"	1882	7,135 63			
"	"	"	1883	84,071 68			
"	"	"	1884	118,187 43			
"	"	"	1885	148,902 66			
"	"	"	1886	179,704 52			
"	"	"	1887	142,563 66			
"	"	"	1888	146,754 37			
"	"	"	1889	215 326 46			
"	"	"	1890	106,760 35		494 31	
"	"	"	1891	61,260 49		5,137 03	173 53
"	"	"	1892	5,964 22		5,803 48	3,505 15
"	"	"	1893	30,838 79		5,499 62	5,341 34
"	"	"	1894			5,667 52	5,295 57
"	"	"	1895			5,354 97	5,063 49
"	"	"	1896			5,409 10	5,410 33
"	"	"	1897			5,526 87	3,966 41
"	"	"	1898			5,799 94	4,710 23
"	"	"	1899			5,073 70	3,533 68
"	"	"	1900			5,613 83	2,777 60
"	"	"	1901			5,175 74	1,138 15
"	"	"	1902			5,254 51	6,377 19
"	"	"	1903	500 00		5,757 00	4,627 70
"	"	"	1904	750 00	2,521 13	5,291 43	6,075 94
"	"	"	1905	100 00	740 45	5,346 62	4,452 68
"	"	"	1906		293 75	5,183 61	2,840 91
"	"	"	1907		10,423 00	2,788 14	1,710 55
"	"	"	1908		37,334 70	4,244 42	2,953 23
"	"	"	1909	126 45	20,250 61	4,720 09	3,374 82
Total.....			.....	*1,248,946 71	71,963 64	99,141 93	73,328 50

* Agreeing with Public Accounts Balance Sheet, 1909, page 4.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

TAY CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure since Confederation.	1868	.....	.....	.....	.....
" " " "	1869	.....	.....	.....	.....
" " " "	1870	.....	.....	.....	.....
" " " "	1871	.....	.....	.....	.....
" " " "	1872	.....	.....	.....	.....
" " " "	1873	.....	.....	.....	.....
" " " "	1874	.....	.....	.....	.....
" " " "	1875	.....	.....	.....	.....
" " " "	1876	.....	.....	.....	.....
" " " "	1877	.....	.....	.....	.....
" " " "	1878	.....	.....	.....	.....
" " " "	1879	.....	.....	.....	.....
" " " "	1880	.....	.....	.....	.....
" " " "	1881	.....	.....	.....	.....
" " " "	1882	.....	748 65	.....	.....
" " " "	1883	4,831 80	.....	.....	.....
" " " "	1884	50,878 12	.....	.....	.....
" " " "	1885	92,473 97	.....	.....	.....
" " " "	1886	65,561 51	.....	.....	.....
" " " "	1887	49,617 92	.....	.....	.....
" " " "	1888	54,166 57	.....	.....	.....
" " " "	1889	89,486 18	.....	.....	.....
" " " "	1890	22,226 23	.....	*	*
" " " "	1891	17,114 78	.....	*	*
" " " "	1892	29,771 65	.....	*	*
" " " "	1893	.....	.....	*	*
" " " "	1894	.....	.....	*	*
" " " "	1895	.....	.....	*	*
" " " "	1896	.....	.....	*	*
" " " "	1897	10,720 50	.....	*	*
" " " "	1898	.....	.....	*	*
" " " "	1899	.....	.....	*	*
" " " "	1900	2,750 00	.....	*	*
" " " "	1901	.....	.....	*	*
" " " "	1902	.....	.....	*	*
" " " "	1903	.....	.....	*	*
" " " "	1904	.....	.....	*	*
" " " "	1905	.....	.....	*	*
" " " "	1906	.....	.....	*	*
" " " "	1907	.....	.....	*	*
" " " "	1908	.....	.....	*	*
" " " "	1909	.....	.....	*	*
Total. ....	.....	+489,599 23	748 65	*	*

* Included in Rideau Canal since 1890.

† Agreeing with Public Accounts 1909, page 4.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

SAULT STE. MARIE CANAL.

	Year ending	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure since Confederation.	1868	.....	.....	.....	.....
" " " "	1869	.....	.....	.....	.....
" " " "	1870	.....	.....	.....	.....
" " " "	1871	.....	.....	.....	.....
" " " "	1872	.....	949 35	.....	.....
" " " "	1873	.....	.....	.....	.....
" " " "	1874	.....	.....	.....	.....
" " " "	1875	.....	.....	.....	.....
" " " "	1876	.....	.....	.....	.....
" " " "	1877	.....	.....	.....	.....
" " " "	1878	.....	.....	.....	.....
" " " "	1879	.....	.....	.....	.....
" " " "	1880	.....	.....	.....	.....
" " " "	1881	.....	.....	.....	.....
" " " "	1882	.....	.....	.....	.....
" " " "	1883	.....	.....	.....	.....
" " " "	1884	.....	.....	.....	.....
" " " "	1885	.....	.....	.....	.....
" " " "	1886	.....	.....	.....	.....
" " " "	1887	.....	.....	.....	.....
" " " "	1888	8,145 06	.....	.....	.....
" " " "	1889	34,018 95	.....	.....	.....
" " " "	1890	176,568 55	.....	.....	.....
" " " "	1891	325,336 33	.....	.....	.....
" " " "	1892	341,474 31	.....	.....	.....
" " " "	1893	589,801 25	.....	.....	.....
" " " "	1894	1,316,529 29	.....	.....	.....
" " " "	1895	466,151 50	.....	3,432 73	.....
" " " "	1896	189,986 59	.....	16,974 70	2,650 17
" " " "	1897	209,561 82	.....	15,381 59	7,671 79
" " " "	1898	21,004 56	.....	14,389 92	8,172 09
" " " "	1899	63,935 48	.....	13,840 24	6,564 40
" " " "	1900	27,157 98	.....	13,901 40	13,219 87
" " " "	1901	323,353 93	48 39	13,730 93	10,289 18
" " " "	1902	122,505 73	.....	15,920 80	14,839 71
" " " "	1903	65,933 43	.....	16,077 22	10,855 70
" " " "	1904	32,029 54	.....	14,653 35	9,491 44
" " " "	1905	110,181 69	.....	15,681 55	14,776 33
" " " "	1906	120,900 00	.....	15,878 11	20,086 15
" " " "	1907	95,504 63	.....	12,290 94	11,520 53
" " " "	1908	140,433 22	.....	20,345 38	23,206 00
" " " "	1909	42,109 63	11,453 28	15,231 79	16,462 29
Total		*4 821,723 47	12,451 02	216,830 65	169,805 65

* Agreeing with Public Accounts, 1909, page 4.

W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Continued.*

SOULANGES CANAL.

	Year ending.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation	1868				
" since	1869				
"	1870				
"	1871				
"	1872				
"	1873				
"	1874				
"	1875				
"	1876				
"	1877				
"	1878				
"	1879				
"	1880				
"	1881				
"	1882				
"	1883				
"	1884				
"	1885				
"	1886				
"	1887				
"	1888				
"	1889				
"	1890				
"	1891				
"	1892	54,235 76			
"	1893	210,336 24			
"	1894	723,380 95			
"	1895	752,016 53			
"	1896	535,939 07			
"	1897	363,126 06			
"	1898	1,016,401 00			
"	1899	1,442,824 22			
"	1900	693,806 24		6,711 84	5,000 00
"	1901	462,626 36	115 00	25,154 78	5,888 77
"	1902	235,021 79		22,672 50	2,267 13
"	1903	248,929 10		31,987 06	10,362 23
"	1904	113,328 45	15,608 69	25,235 25	39,382 01
"	1905	34,202 71	30,406 25	25,432 49	21,174 84
"	1906	5,000 22	16,033 79	24,817 37	17,096 33
"	1907	13,508 88	3,216 29	19,964 04	15,604 71
"	1908	50,634 01	4,245 18	28,988 36	35,687 11
"	1909	17,795 79	12,363 78	32,324 20	34,802 37
Total.....		*6,973,113 38	81,988 98	243,287 89	187,265 50

* Included in total cost of St. Lawrence River and Canals, *see* page 37.W. C. LITTLE,
*Accountant.*DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

STATEMENT showing amount expended on Construction and Enlargement of Canals, to
March 31, 1909.

Canal.	Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
St. Peter's.....	648,547 14		648,547 14
Lachine.....	2,589,532 85	9,570,566 95	12,160,099 80
Beauharnois.....	1,636,690 26		1,636,690 26
St. Lawrence River and Canals.....	18,442 85	3,415,023 38	3,433,466 23
Lake St. Louis.....		298,176 11	298,176 11
Lake St. Francis.....		75,906 71	75,906 71
Cornwall.....	1,945,621 73	5,289,052 87	7,234,677 60
Williamsburg.....		877,090 57	
{ Farran's Point.....		6,118,927 32	
{ Galops.....		2,158,242 00	
{ Rapide Plat.....			10,485,611 69
{ Williamsburg.....	1,320,655 54	10,696 26	
Welland.....	7,693,824 03	20,644,791 99	28,338,616 02
Ste. Anne's.....	131,456 51	1,035,759 12	1,170,215 63
*Carillon and Grenville.....	63,053 64	4,119,039 32	4,182,092 96
Culbute.....	382,776 46		382,776 46
Rideau.....	4,085,889 21		4,085,889 21
Saint Ours.....	121,537 65		121,537 65
Chambly.....	637,214 66	13,307 12	650,521 68
Murray.....	1,248,946 71		1,248,946 71
Trent.....	6,873,501 09		6,873,501 09
Tay.....	489,599 23		489,599 23
Sault Ste. Marie.....	4,821,723 47		4,821,723 47
Sonlanges.....	6,973,113 38		6,973,113 38
Total ..	41,685,129 41	53,626,579 62	95,311,859 03

* Construction by Imperial Government not included. Records relating to same were kept in Ordnance Office, Montreal, and were destroyed by fire in 1852.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VI., A. 1910

*RECAPITULATION—EXPENDITURE on Canals, also showing Revenue received.

	Year ending.	Capital.	Income.	Staff.	Repairs.	Revenue received
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation, including Imperial Government expenditure		20,593,866 13	98,378 46			
Government expenditure since Confederation.....	1868	33,784 06	95,347 79	113,084 50	101,646 44	403,879 19
" " ..	1869	126,898 20	55 00	116,069 76	118,579 31	400,263 32
" " ..	1870		90,355 96	120,403 02	150,176 70	414,687 02
" " ..	1871		116,429 54	135,040 81	140,467 52	488,538 76
" " ..	1872	255,645 75	33,289 27	124,137 09	152,086 25	466,847 52
" " ..	1873	256,547 27	127,369 55	148,581 18	186,573 13	486,433 26
" " ..	1874	1,189,591 91	51,037 05	167,194 40	213,613 86	510,755 99
" " ..	1875	1,714,830 37	479 00	168,401 21	203,226 85	414,979 59
" " ..	1876	2,388,733 46	810 75	178,411 80	190,578 45	390,337 04
" " ..	1877	4,131,374 30	22 30	179,661 40	138,448 51	390,857 37
" " ..	1878	3,843,338 62		187,521 31	122,251 60	373,814 17
" " ..	1879	3,064,098 61		191,892 44	115,349 99	337,675 13
" " ..	1880	2,123,366 34		195,039 33	147,167 52	341,598 14
" " ..	1881	2,075,891 65	7,246 69	197,573 62	154,653 63	361,558 17
" " ..	1882	1,593,174 09	55,023 03	224,572 61	187,399 02	325,231 54
" " ..	1883	1,763,001 97	62,503 14	269,415 01	178,617 86	361,604 01
" " ..	1884	1,577,295 42	60,993 99	280,657 29	192,219 38	372,561 69
" " ..	1885	1,504,621 47	58,297 59	280,226 20	201,708 47	321,289 47
" " ..	1886	1,333,324 80	31,984 02	282,323 63	198,251 97	328,977 43
" " ..	1887	1,783,698 16	65,983 06	285,172 62	198,888 81	321,784 88
" " ..	1888	1,033,118 34	120,561 59	292,458 76	201,928 93	317,902 04
" " ..	1889	972,918 43	162,015 49	301,040 23	240,261 36	333,188 90
" " ..	1890	1,026,364 24	146,853 54	290,516 63	176,089 00	354,816 92
" " ..	1891	1,318,092 15	165,843 87	294,562 12	204,768 45	349,431 90
" " ..	1892	1,437,149 30	194,129 61	293,115 58	231,089 54	324,475 24
" " ..	1893	2,069,573 30	196,185 84	291,588 97	204,759 39	357,089 87
" " ..	1894	3,027,164 19	109,216 33	294,146 34	179,630 13	387,788 97
" " ..	1895	2,452,273 65	216,057 58	281,477 04	164,033 71	339,890 49
" " ..	1896	2,258,778 97	85,820 49	292,121 05	209,321 60	339,538 72
" " ..	1897	2,348,636 91	101,205 74	287,970 36	178,385 47	384,780 53
" " ..	1898	3,207,249 79	82,400 55	280,872 44	203,478 86	407,652 81
" " ..	1899	3,899,877 31	82,205 60	280,628 57	202,312 36	369,044 38
" " ..	1900	2,639,564 93	120,653 93	292,609 24	227,626 97	322,642 86
" " ..	1901	2,360,569 89	135,500 57	314,095 04	262,876 07	315,425 69
" " ..	1902	2,114,689 88	213,044 91	317,838 61	263,768 27	300,413 68
" " ..	1903	1,823,273 61	275,103 58	390,281 82	294,113 92	230,213 15
" " ..	1904	1,880,787 20	298,678 23	381,016 82	350,278 54	79,536 51
" " ..	1905	2,071,593 72	352,855 43	431,499 60	401,742 79	78,009 21
" " ..	1906	1,552,121 21	310,716 70	447,962 92	375,889 60	108,067 76
" " ..	1907	887,838 61	254,423 18	329,629 63	287,231 03	105,003 15
" " ..	1908	1,768,156 37	483,250 11	473,638 95	411,660 53	144,882 13
" " ..	1909	1,868,834 45	699,304 73	475,515 04	433,958 10	199,501 26
Total.....		95,311,709 03	5,761,635 79	11,180,264 99	8,997,109 92	13,962,969 86

* This does not include expenditure which has been charged to Canals General but only the amounts expended on specified canals.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

HYDRAULIC AND OTHER RENTS.

Balances due April 1, 1908.	Accrued during the year ended March 31, 1909.	Totals.	1908-1909.	Abatement.	Deposited to the credit of the Receiver General.	Paid into hands of the Collectors.	Balance due March 31, 1909.	Totals.
\$ cts.	\$ cts.	\$ cts.		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
65,589 37	44,691 56	110,280 93	 Welland Canal.....	840 00	52,273 16	.....	57,167 77	110,280 93
5,970 17	3,446 00	9,416 17	 Williamsburg Canal.....	15 00	1,523 00	.....	7,878 17	9,416 17
7,729 37	7,698 50	15,427 87	 Cornwall Canal.....	.....	7,417 50	.....	7,910 37	15,357 87
13,530 81	11,765 50	28,296 34	 Beauharnois Canal.....	2,275 00	17,353 00	.....	8,638 34	28,286 34
42,090 79	89,731 56	131,822 35	 Lachine Canal.....	2,634 95	95,702 02	.....	33,485 38	131,822 35
755 81	186 00	941 84	 Chambly Canal.....	.....	52 00	.....	889 81	941 84
3,395 45	4,107 50	7,502 95	 Rideau Canal.....	.....	3,308 75	.....	4,254 20	7,562 95
1,317 95	2,912 04	4,229 99	 Trent Canal.....	.....	2,225 54	.....	2,004 45	4,229 99
50 00	525 00	575 00	 Sault Ste. Marie Canal.....	60 00	500 00	.....	15 00	575 00
25,991 83	645 00	26,636 83	 Carleton and Grenville Canal.....	.....	114 00	.....	26,492 83	26,606 83
9 00	68 00	77 00	 Sundry Canals.....	.....	68 00	.....	9 00	77 00
.....	3,067 00	3,067 00	 Soulanges Canal.....	.....	3,067 00	.....	.....	3,067 00
166,420 61	171,803 66	338,224 27	Totals.....	5,824 95	183,603 97	.....	148,795 35	338,224 27

W. C. LITTLE,
Accountant.DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

INTERCOLONIAL RAILWAY.

(Including amounts paid to Nova Scotia Railway and European & North American Railway, N.E.)

	Year ending.	Construction.	Income.	Working Expenses including Windsor Branch Ry.	Revenue received, including Windsor Branch Ry.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Expenditure prior to Confederation.....		10,766,725 54			
" since "	1868	483,353 65		359,961 08	420,752 58
" " "	1869	282,615 18		387,548 47	455,022 76
" " "	1870	1,729,381 49		445,208 75	471,245 09
" " "	1871	2,916,782 13		442,993 31	565,713 52
" " "	1872	5,131,141 51		595,076 22	622,900 56
" " "	1873	5,201,450 37		1,011,892 60	703,458 26
" " "	1874	3,614,898 81		1,847,175 24	893,430 17
" " "	1875	3,426,099 55		1,532,589 62	861,593 43
" " "	1876	1,108,321 59		1,277,197 79	848,861 46
" " "	1877	1,318,352 19		1,661,673 55	1,154,445 35
" " "	1878	408,816 74		1,811,273 56	1,378,946 78
" " "	1879	226,639 19		2,010,183 22	1,294,099 69
" " "	1880	2,048,014 60		1,607,956 70	1,520,310 45
" " "	1881	608,732 80		1,780,353 53	1,777,856 76
" " "	1882	585,568 79		2,080,592 37	2,100,315 85
" " "	1883	1,616,632 96		2,383,477 20	2,395,034 99
" " "	1884	1,405,377 52		2,366,719 95	2,376,666 19
" " "	1885	1,195,363 08		2,460,229 87	2,392,605 00
" " "	1886	544,958 17		2,508,473 10	2,406,858 88
" " "	1887	823,070 86		2,854,158 91	2,621,337 41
" " "	1888	742,203 09		3,300,481 94	2,937,337 40
" " "	1889	655,228 13		3,174,785 19	2,923,736 46
" " "	1890	365,246 48		3,500,455 80	2,958,243 38
" " "	1891	79,929 84		3,691,273 65	3,067,630 51
" " "	1892	168,101 77		3,458,891 39	2,978,950 82
" " "	1893	228,984 79		3,062,207 45	3,099,815 20
" " "	1894	166,362 43		2,999,317 07	3,020,485 74
" " "	1895	327,034 51		2,964,940 98	2,979,795 59
" " "	1896	259,105 23		3,029,304 08	2,994,201 93
" " "	1897	145,142 00		2,936,789 71	2,906,631 25
" " "	1898	252,367 20	70,000 00	3,275,830 14	3,154,896 49
" " "	1899	1,081,929 94	210,000 00	3,478,559 30	3,775,558 08
" " "	1900	1,796,348 29		4,444,296 25	4,599,423 14
" " "	1901	3,633,836 57		5,477,285 30	5,019,497 76
" " "	1902	4,621,841 05		5,596,939 57	5,720,990 50
" " "	1903	2,254,256 68		6,214,496 38	6,366,884 53
" " "	1904	1,880,856 60		7,264,263 13	6,392,865 48
" " "	1905	3,937,621 93		8,535,689 91	6,833,561 50
" " "	1906	3,765,170 90		7,599,400 33	7,693,282 40
" " "	1907	1,506,209 26		6,045,597 15	6,293,751 52
" " "	1908	4,363,494 01		9,195,347 64	9,229,989 21
" " "	1909	3,867,232 16		9,364,256 10	8,583,100 79
Total		*\$1,540,809 05	280,000 00	139,129,143 50	130,732,084 86

* Including \$296,872.90 charged to 'Consolidated Fund.'

† Expenditure for year.....	\$ 1,894,856 90
Less refunds of previous years.....	14,000 30

\$ 1,880,856 60

‡ Expenditure for year..... \$ 3,760,942 95

Add refunded cheque of 1901-2 paid during fiscal year 1905-6..... 4,227 95

\$ 3,765,170 90

SESSIONAL PAPER No. 20

INTERCOLONIAL RAILWAY—*Concluded.*

Total cost of Construction as shown on page 60..... \$81,540,809 08
 Less amounts transferred from Capital to Consolidated Fund as follows :—

	Nova Scotia Ry.	European and North American Ry.	
1868.....	\$ 16,800 99	\$ 11,302 89	
1870.....	34,403 45	1,749 21	
1871.....	50,405 69	.....	
1873.....	106,899 59	75,311 08	
	<u>\$ 208,509 72</u>	<u>\$ 88,363 18</u>	
		208,509 72	
			296,872 90
			<u>†\$81,243,936 18</u>
Cape Breton Railway, page 65		3,860,679 14	
Oxford and New Glasgow Railway, page 64.....		1,949,063 21	
Eastern Extension Railway, page 62		1,324,042 81	
Montreal and European Short Line Railway, page 66.....		333,942 72	
Drummond County Railway, page 70.....		1,464,000 00	
Canada Eastern Railway, page 73.....		819,000 00	
			<u>*9,750,727 88</u>
Total capital cost of Intercolonial Railway system.....			<u>\$90,994,664 06</u>

* Agreeing, less outstanding cheques, with Public Accounts, 1908-1909, page 4.

† Includes \$220.48 amount of an Exchequer Court award in 1907 against the Oxford and New Glasgow Railway.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
 OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

EASTERN EXTENSION RAILWAY.

	Year.	Capital.	Working Expenses.	Revenue Received.
		\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation.....	1868			
" since "	1869			
" " "	1870			
" " "	1871			
" " "	1872			
" " "	1873			
" " "	1874			
" " "	1875			
" " "	1876			
" " "	1877			
" " "	1878			
" " "	1879			
" " "	1880			
" " "	1881			
" " "	1882			
" " "	1883			
" " "	1884	1,284,311 97	10,033 77	30,767 66
" " "	1885	2,035 92	78,273 65	73,050 01
" " "	1886	183 79	94,756 06	66,893 11
" " "	1887		94,254 04	64,107 10
" " "	1888		90,954 73	70,552 20
" " "	1889	34,235 73	90,719 04	72,436 65
" " "	1890		79,102 77	84,658 95
" " "	1891	3,255 40	*	†
" " "	1892		*	†
" " "	1893		*	†
" " "	1894		*	†
" " "	1895		*	†
" " "	1896		*	†
" " "	1897		*	†
" " "	1898		*	†
" " "	1899		*	†
" " "	1900		*	†
" " "	1901		*	†
" " "	1902		*	†
" " "	1903		*	†
" " "	1904		*	†
" " "	1905		*	†
" " "	1906		*	†
" " "	1907		*	†
" " "	1908		*	†
" " "	1909		*	†
Total		† 1,324,042 81	538,094 06	462,465 68

* Included in Intercolonial Railway expenses. † Included in Intercolonial Railway revenue.

‡ Included in total cost of Intercolonial Railway system, page 61.

W. C. LITTLE,
Accountant.DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

* Victoria, chap. 6, transferred the Carleton Branch Railway to the city of St. John, N. B., for the sum of \$40,000, which sum was paid in March, 1893, to the Receiver General.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

OXFORD AND NEW GLASGOW.

	Year.	Capital.	Working Expenses.
		\$ cts.	\$ cts.
Government expenditure prior to Confederation.....	1868		
" since	1869		
"	1870		
"	1871		
"	1872		
"	1873		
"	1874		
"	1875		
"	1876		
"	1877		
"	1878		
"	1879		
"	1880		
"	1881		
"	1882		
"	1883		
"	1884		
"	1885		
"	1886		
"	1887		
"	1888	280,932 35	
"	1889	840,553 57	
"	1890	434,074 60	
"	1891	220,886 39	
"	1892	48,745 23	
"	1893	7,922 80	
"	1894	112,382 75	
"	1895	*	
"	1896	*	
"	1897	3,565 52	
"	1898		
"	1899		
"	1900		
"	1901		
"	1902		
"	1903		
"	1904		
"	1905		
"	1906		
"	1907	*	
"	1908		
"	1909		
Total ...		† 1,949,063 21	†

* Included in Intercolonial Railway capital. † Included in Intercolonial Railway working expenses.

† Included in total cost of Intercolonial Railway system, page 61. Add \$220.48 amount of Exchequer Court award paid in 1907 included in I. C. R.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

MONTREAL AND EUROPEAN SHORT LINE RAILWAY.

	Year.	Construction.	Working Expenses.
		\$ cts.	\$ cts.
Government expenditure prior to Confederation	1868		
" since "	1869		
" " "	1870		
" " "	1871		
" " "	1872		
" " "	1873		
" " "	1874		
" " "	1875		
" " "	1876		
" " "	1877		
" " "	1878		
" " "	1879		
" " "	1880		
" " "	1881		
" " "	1882		
" " "	1883		
" " "	1884		
" " "	1885	49,587 45	
" " "	1886	135,214 38	
" " "	1887	24,157 32	
" " "	1888	397 35	
" " "	1889		
" " "	1890		
" " "	1891	124,568 23	
" " "	1892		
" " "	1893		
" " "	1894	17 99	
" " "	1895		
" " "	1896		
" " "	1897		
" " "	1898		
" " "	1899		
" " "	1900		
" " "	1901		
" " "	1902		
" " "	1903		
" " "	1904		
" " "	1905		
" " "	1906		
" " "	1907		
" " "	1908		
" " "	1909		
Total		*333,942 72	

* Included in total cost of Intercolonial Railway system, page 61.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

	Year.	Construction.	Working Expenses.	Revenue received.
		\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation		3,114,735 11		
" since	1874		750 00	
"	1875	46,086 63	49,344 62	24,493 99
"	1876	42,546 10	219,930 43	118,060 96
"	1877	200,000 00	228,595 25	130,664 92
"	1878	6,551 86	221,599 49	135,899 60
"	1879	40,129 05	223,313 12	125,855 91
"	1880	16,539 82	164,640 55	113,851 11
"	1881		203,122 88	131,131 43
"	1882	402 03	228,259 97	137,267 54
"	1883	57,186 02	252,808 41	146,170 42
"	1884	130,663 38	236,428 13	144,504 12
"	1885	76,956 56	211,207 01	158,588 06
"	1886	4,668 33	216,744 34	155,584 36
"	1887	5,800 00	204,237 45	155,303 37
"	1888		229,639 95	158,363 62
"	1889		247,559 44	171,369 56
"	1890		266,485 85	160,971 78
"	1891		257,990 08	174,258 05
"	1892	8,300 49	289,706 38	157,442 69
"	1893		226,422 17	162,690 42
"	1894		226,891 06	158,533 83
"	1895		232,905 19	149,654 78
"	1896		225,138 56	146,476 54
"	1897		240,489 90	153,443 13
"	1898	17,541 88	231,418 74	158,950 61
"	1899	22,000 00	218,053 01	165,012 03
"	1900	53,546 02	220,931 81	174,738 73
"	1901	280,173 93	261,766 24	193,883 48
"	1902	475,997 94	270,159 97	197,999 93
"	1903	829,414 18	259,637 82	217,714 24
"	1904	698,877 47	335,695 44	234,390 03
"	1905	591,412 65	370,464 44	217,330 61
"	1906	496,124 89	294,253 16	257,270 57
"	1907	91,710 52	283,148 50	215,434 97
"	1908	390,461 83	399,947 79	304,579 83
"	1909	561,206 90	400,330 41	311,319 63
Total		*8,250,033 59	8,650,017 56	5,919,204 85

* Agrees with Public Accounts Balance Sheet, 1908-1909, page 4.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

CANADIAN PACIFIC RAILWAY.

				Year.	Construction, including subsidy of \$25,000,000.	Working Expenses.	Revenue received.
					\$ cts.	\$ cts.	\$ cts.
Government expenditure prior to Confederation....				1868			
"	since	"	"	1869			
"	"	"	"	1870			
"	"	"	"	1871	30,148 32		
"	"	"	"	1872	489,428 16		
"	"	"	"	1873	561,818 44		
"	"	"	"	1874	310,224 88		
"	"	"	"	1875	1,546,241 67		
"	"	"	"	1876	3,346,567 06		
"	"	"	"	1877	1,691,149 97		
"	"	"	"	1878	2,228,373 13		
"	"	"	"	1879	2,240,285 47		
"	"	"	"	1880	4,044,522 72	78,892 01	104,975 69
"	"	"	"	1881	4,968,503 93	236,944 98	291,498 06
"	"	"	"	1882	(1) 4,589,075 79	1,786 20	
"	"	"	"	1883	(2) 10,033,800 04	266 09	
"	"	"	"	1884	(3) 11,192,722 02	327 02	
"	"	"	"	1885	(4) 9,900,281 53		
"	"	"	"	1886	(5) 3,672,584 81		
"	"	"	"	1887	(6) 915,057 49		
"	"	"	"	1888	52,098 65		
"	"	"	"	1889	86,716 07		
"	"	"	"	1890	40,980 54		
"	"	"	"	1891	37,367 00		
"	"	"	"	1892	66,211 39		
"	"	"	"	1893	413,836 49		
"	"	"	"	1894	146,539 87		
"	"	"	"	1895	49,209 77		
"	"	"	"	1896	65,669 49		
"	"	"	"	1897	14,054 50		
"	"	"	"	1898	692 17		
"	"	"	"	1899	8,418 53		
"	"	"	"	1900	236 11		
"	"	"	"	1901	8,978 87		
"	"	"	"	1902	448 70		
"	"	"	"	1903			
"	"	"	"	1904	33,076 39		
"	"	"	"	1905			
"	"	"	"	1906			
"	"	"	"	1907			
"	"	"	"	1908	600 00		
"	"	"	"	1909	937 77		
Total.....					*62,786,857 74	318,216 30	396,473 75

* Agrees with Public Accounts Balance Sheet, 1908-1909, page 8.

(1) Including.....	\$ 2,210,000 00 on account subsidy.
(2) "	5,323,076 60 "
(3) "	7,254,208 27 "
(4) "	6,862,201 00 "
(5) "	2,890,427 00 "
(6) "	460,087 13 "

†\$25,000,000 00

† See also statement page 78, for the expenditure.

W. C. LITTLE,
Accountant.DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

ANNAPOLIS AND DIGBY RAILWAY.

			Year.	Capital.	Income Expenses.
				\$ cts.	\$ cts.
Government expenditure prior to Confederation			1868		
	since		1869		
			1870		
			1871		
			1872		
			1873		
			1874		
			1875		
			1876		
			1877		
			1878		
			1879		
			1880		
			1881		
			1882		
			1883		
			1884		
			1885		
			1886		
			1887		
			1888		
			1889	9,847 27	
			1890	381,942 75	
			1891	196,869 36	
			1892	26,129 89	
			1893	2,190 62	
			1894	1,675 36	
			1895	570 55	
			1896		
			1897	41,457 29	
			1898		
			1899		
			1900		
			1901		8,381 82
			1902		
			1903		
			1904		
			1905		
			1906		
			1907		
			1908		
			1909		
Total				*660,683 09	8,381 82

* Of this amount Parliament voted under 52 Vic., chap. 8, the sum of \$500,000 as a subsidy to the Western Counties Railway.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909

DRUMMOND COUNTY RAILWAY.

	Year.	Construction.	Working Expenses.
		\$ cts.	\$ cts.
Government expenditure prior to Confederation.....	1868		
" since "	1869		
" "	1870		
" "	1871		
" "	1872		
" "	1873		
" "	1874		
" "	1875		
" "	1876		
" "	1877		
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" "	1893		
" "	1894		
" "	1895		
" "	1896		
" "	1897		
" "	1898		
" "	1899		
" "	1900	1,459,000 00	
" "	1901		
" "	1902	5,000 00	
" "	1903		
" "	1904		
" "	1905		
" "	1906		
" "	1907		
" "	1908		
" "	1909		
Total.....		*1464,000 00	

* Included in total cost of Intercolonial Railway system, page 61.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA. July 2, 1909.

SESSIONAL PAPER No. 20

YUKON TERRITORY WORKS.
(Stikine Teslin Railway.)

	Year.	Construction.
		\$ cts.
Government expenditure prior to Confederation		
" since "	1868	
" " "	1869	
" " "	1870	
" " "	1871	
" " "	1872	
" " "	1873	
" " "	1874	
" " "	1875	
" " "	1876	
" " "	1877	
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" " "	1890	
" " "	1891	
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" " "	1893	
" " "	1894	
" " "	1895	
" " "	1896	
" " "	1897	
" " "	1898	
" " "	1899	
" " "	1900	
" " "	1901	
" " "	1902	283,323 55
" " "	1903	
" " "	1904	
" " "	1905	
" " "	1906	
" " "	1907	
" " "	1908	
" " "	1909	
Total.		*283,323 55

*Included in Public Accounts Balance Sheet, 1902-1903, page 6.

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

CANADA EASTERN RAILWAY.

			Year.	Construction.
				\$ cts.
Government expenditure prior to Confederation.....			1868	
" since	"	"	1869	
"	"	"	1870	
"	"	"	1871	
"	"	"	1872	
"	"	"	1873	
"	"	"	1874	
"	"	"	1875	
"	"	"	1876	
"	"	"	1877	
"	"	"	1878	
"	"	"	1879	
"	"	"	1880	
"	"	"	1881	
"	"	"	1882	
"	"	"	1883	
"	"	"	1884	
"	"	"	1885	
"	"	"	1886	
"	"	"	1887	
"	"	"	1888	
"	"	"	1889	
"	"	"	1890	
"	"	"	1891	
"	"	"	1892	
"	"	"	1893	
"	"	"	1894	
"	"	"	1895	
"	"	"	1896	
"	"	"	1897	
"	"	"	1898	
"	"	"	1899	
"	"	"	1900	
"	"	"	1901	
"	"	"	1902	
"	"	"	1903	
"	"	"	1904	
"	"	"	1905	800,000 00
"	"	"	1906	
"	"	"	1907	
"	"	"	1908	19,000 00
"	"	"	1909	
Total.....				* 819,000 00

*Included in total cost of Intercolonial Railway system, page 61.

W. C. LITTLE,
Accountant.DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing amount expended on Capital Account on Railways.

Railways.	—	
	\$ cts.	\$ cts.
Intercolonial.....	81,243,715 70	
Cape Breton.....	3,860,679 14	
Oxford and New Glasgow.....	1,949,283 69	
Eastern Extension.....	1,324,042 81	
Drummond County.....	1,464,000 00	
Montreal and European Short Line.....	333,942 72	
Canada Eastern.....	819,000 00	
		90,994,664 06
Carleton Branch.....		48,410 48
Prince Edward Island.....		8,259,033 59
Canadian Pacific.....		62,786,857 74
Annapolis and Digby.....		660,683 09
Yukon Territory Works (Stikine-Teslin Ry.).....		283,323 55
National Transcontinental.....		51,966,750 22
Governor General's car.....		56,538 82
Hudson Bay Railway Surveys.....		92,427 83
Total.....		215,148,689 38
<i>Memo. re Recapitulation—Railways.</i>		
Total cost as per statement above.....		215,148,689 38
Add amounts transferred from Capital to Consolidated Fund, Intercolonial Railway, see statement, page 61.....		296,872 90
Agreeing with total of Construction, as per statement, page 75.....		215,445,562 28

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

RECAPITULATION—GOVERNMENT RAILWAYS.

	Year.	Construction.	Working Expenses.	Revenue.
		§ cts.	§ cts.	§ cts.
Government expenditure prior to Confederation		13,881,460 65		
" since " 1868		483,353 65	359,961 08	420,752 58
" " " 1869		282,615 18	387,548 47	455,022 76
" " " 1870		1,729,381 49	445,208 75	471,245 09
" " " 1871		2,946,930 45	442,993 31	565,713 52
" " " 1872		5,620,569 67	595,076 22	622,900 56
" " " 1873		5,763,268 81	1,011,892 60	703,458 26
" " " 1874		3,925,123 69	1,847,925 24	893,430 17
" " " 1875		5,018,427 85	1,581,934 24	886,087 42
" " " 1876		4,497,434 75	1,497,128 22	966,922 42
" " " 1877		3,209,502 16	1,890,268 80	1,285,110 27
" " " 1878		2,643,741 73	2,032,873 05	1,514,846 38
" " " 1879		2,507,053 71	2,233,496 34	1,419,955 60
" " " 1880		6,109,077 14	1,851,489 26	1,739,137 25
" " " 1881		5,577,236 73	2,220,421 39	2,200,486 25
" " " 1882		5,175,046 61	2,310,638 54	2,237,583 39
" " " 1883		11,707,619 02	2,636,551 70	2,541,205 41
" " " 1884		14,013,074 89	2,613,508 87	2,551,937 97
" " " 1885		11,224,244 54	2,749,710 53	2,624,243 07
" " " 1886		4,443,220 17	2,819,973 50	2,628,336 35
" " " 1887		1,846,887 18	3,152,650 40	2,840,747 88
" " " 1888		1,765,582 11	3,621,076 62	3,166,253 22
" " " 1889		2,709,857 37	3,513,063 67	3,167,542 67
" " " 1890		2,392,767 99	3,846,044 42	3,203,874 11
" " " 1891		1,184,317 34	3,949,263 73	3,181,888 56
" " " 1892		417,425 73	3,748,597 77	3,136,393 51
" " " 1893		712,917 44	3,288,629 62	3,262,505 62
" " " 1894		585,749 01	3,226,208 13	3,179,019 57
" " " 1895		376,814 83	3,197,846 17	3,129,450 37
" " " 1896		324,774 72	3,254,442 64	3,140,678 47
" " " 1897		204,624 31	3,195,959 58	3,060,074 38
" " " 1898		270,990 85	3,507,248 88	3,313,847 10
" " " 1899		1,112,348 47	3,696,612 31	3,940,570 11
" " " 1900		3,309,130 42	4,665,228 06	4,774,161 87
" " " 1901		3,922,989 37	5,739,051 54	5,213,381 24
" " " 1902		5,386,611 24	5,861,099 54	5,918,990 43
" " " 1903		3,083,680 86	6,474,134 20	6,584,598 77
" " " 1904		2,619,059 86	7,599,958 57	6,627,255 51
" " " 1905		6,125,481 79	8,906,154 35	7,050,892 11
" " " 1906		6,102,565 74	7,893,653 49	7,950,552 97
" " " 1907		7,174,370 17	6,328,745 65	6,509,186 49
" " " 1908		23,684,005 25	9,595,295 43	9,534,569 04
" " " 1909		29,414,227 34	9,764,586 51	8,894,420 42
Total		*215,485,562 28	149,554,151 39	137,509,229 14

*Total amount paid on Construction.....\$ 215,485,562 28

Less amount received from the City of St. John, N.B., as purchase of the Carleton Branch Railway 40,000 00

Total cost of Construction.....†\$215,445,562 28

† Agreeing with amount expended on Capital Account on Railways, see page 74.

W. C LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing Miscellaneous Expenditure yearly, by the Department of Railways and Canals.

Year ending.	Chargeable to Capital.	CHARGEABLE TO INCOME.				CHARGEABLE TO REVENUE.			Total Yearly Expenditure
	Canals.	Canals.	Railways.	General.	Canals.	Railways.	General.		
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.		
1868.				6,305 66	12,000 00		2,416 66	20,722 32	
1869.				8,367 52	12,000 00		1,000 00	21,367 52	
1870.				7,853 03	18,698 89		7,679 78	34,231 70	
1871.				34,773 72	12,018 98			46,792 70	
1872.				20,049 50	12,208 76			32,258 26	
1873.				36,891 74	12,099 44		6,889 20	55,880 38	
1874.				40,098 84	12,959 25		5,428 98	58,487 07	
1875.				35,579 24	12,047 43		5,620 17	53,246 84	
1876.				42,920 10	86 08		5,690 28	48,696 46	
1877.					51 87	43,639 97		43,691 84	
1878.		1,860 00			556 00		34,388 59	36,804 59	
1879.									
1880.		2,561 55			323 16			2,884 71	
1881.		2,338 41			5,535 22			7,873 63	
1882.					9,826 23			9,826 23	
1883.		11,781 27			6,978 54			18,759 81	
1884.		7,486 62	62,256 58		8,305 41			78,048 61	
1885.		16,725 47	11,003 38		1,210 61			28,939 46	
1886.		20,323 62	10,383 59		776 30			31,483 51	
1887.		20,873 21	23,545 34		649 04			45,067 59	
1888.		34,533 07	22,898 90		5,799 83			63,231 80	
1889.		10,091 87	16,552 64		5,207 64			31,852 15	
1890.		16,426 69	50,909 74		49,550 21			116,886 64	
1891.		16,925 31	16,314 41		56,922 05			90,161 77	
1892.		6,540 49	19,062 51		65,074 07			90,677 07	
1893.		8,498 41	4,313 73	28,640 93	63,965 54			105,418 61	
1894.		4,178 85	4,855 11	15,746 31	60,265 22			85,045 49	
1895.		10,695 48	13,221 27	19,304 87	60,769 56			103,991 18	
1896.		10,893 40	6,562 20	25,194 21	70,340 22			112,990 03	
1897.		2,937 47	5,118 99	25,142 90	62,777 12		597 39	96,573 87	
1898.		1,719 69	8,327 96	28,042 10	56,284 42	1,400 00		95,774 17	
1899.		1,318 79	67,005 86	22,085 19	66,850 29			157,260 13	
1900.		11,873 35	33,496 99	22,802 18	58,836 57			127,009 09	
1901.		12,267 99	28,658 78	33,986 68	61,938 61			136,852 06	
1902.		3,658 23	21,752 58	34,138 50	65,770 65			125,319 96	
1903.		2,491 84	15,570 43	35,398 00	63,175 19			116,635 46	
1904.		3,730 79	85,353 17	36,262 32	66,067 30			191,413 58	
1905.		1,498 14	97,507 00	38,660 52	64,515 07			202,180 73	
1906.		9,160 44	99,018 80	37,484 64	62,171 45			267,835 33	
1907.		9,687 55	92,115 62	34,183 75	66,251 27			202,238 19	
1908.	14,999 70	24,760 08	178,266 39	45,115 99	105,518 99			368,661 15	
1909.	5,034 00	28,819 54	604,483 02	20,912 04	106,065 87			725,815 31	
	20,033 70	316,657 62	1,598,554 99	735,940 48	1,482,448 35	45,039 97	69,711 05	4,228,887 00	

W. C. LITTLE,
Accountant.DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

RECAPITULATION—RAILWAYS AND CANALS, TO MARCH 31, 1909.

EXPENDITURE.

Chargeable to Capital Account—

Railways, <i>see</i> Statement page 74	\$ 215,148,689 38
Canals " " 56 and 76	95,331,742 73
	<u>\$ 310,480,432 11</u>

Chargeable to Consolidated Fund—

* Railway Subsidies as per Statement page 78. \$ * 39,402,019 23

Income Account—

Intercolonial Railway	<i>see</i> page 60.....	\$ 280,000 00
Add transferred from Capital	" 61.....	296,872 90
Railways	" 76.....	1,598,554 99
Canals	" 56.....	5,761,635 79
"	" 76.....	316,657 62
General, Railways and Canals	" 76.....	735,940 48
		<u>8,989,661 78</u>

Revenue Account—

Canals—Operating and maintaining staff, <i>see</i> page 56.	\$ 11,180,264 99
Canals—Repairs, <i>see</i> page 56	8,997,109 92
" " 76.....	1,482,448 35
Railways—Working expenses, <i>see</i> page 75.....	149,554,151 39
" " 76.....	45,039 97
General—Railways and Canals " 76	69,711 05
	<u>171,328,725 67</u>
	<u>219,720,406 68</u>

Total expenditure on Railways and Canals..... \$ 530,209,838 79

EXPENDITURE AS ABOVE SEPARATED AS BETWEEN RAILWAYS AND CANALS.

RAILWAYS.

Capital Account	\$ 215,148,689 38
Consolidated Fund.....	191,176,638 48
	<u>\$ 406,325,327 86</u>

CANALS.

Capital Account.....	\$ 95,331,742 73
Consolidated Fund.....	27,738,116 67
	<u>\$ 123,069,859 40</u>

Total..... \$ 529,395,187 26

GENERAL, COMMON TO BOTH.

Consolidated Fund.....	\$ 805,651 53
------------------------	---------------

Total expenditure on Railways and Canals..... \$ 530,209,838 79

REVENUE, SEPARATED AS BETWEEN RAILWAYS AND CANALS.

Railways—Revenue received from July 1, 1867, to March 31, 1909 (for details <i>see</i> page 75).	\$ 137,509,229 14
Canals " " " " " 56).	13,962,969 86

Total revenue, Railways and Canals \$ 151,572,199 00

* This amount does not include the subsidy of \$25,000,000 to the Canadian Pacific Railway, nor the amount \$669,683.09 expended on the Annapolis and Digby Railway, both of which are included in Capital Account, nor the annual payment of \$119,700 to the Provincial Government of Quebec, being interest at the rate of 5 per cent on the sum of \$2,394,000 up to 1905, granted by 47 Vict., cap. 8 (1884) and the annual payment of \$107,730, being interest at the rate of 4½ per cent since and including 1905 on the said sum of \$2,394,000, for the line between Ottawa and Quebec which sum was transferred to the Public Debt as a liability, and is dealt with by the Finance Department (*see* Public Accounts, 1898-1909, and page 79, 1908).

W. C. LITTLE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

9-10 EDWARD VII., A. 1910

STATEMENT showing Subsidies Voted for Railways as to which Contracts have

SUBSIDIES VOTED.		RAILWAYS.	
Authority.	Amount.		July 1, 1883, to June 30, 1902.
	\$ cts.		\$ cts.
		Brought forward.....	6,451,812 84
48-9 Vic., c. 59	118,400 00	New Brunswick and Prince Edward Island, N.B. . . .	118,440 00
50-1 " 24	217,600 00	Laurentian Railway, formerly St. Lawrence, Lower Laurentian and Saguenay Ry., Quebec.....	217,600 00
49 " 10	11,200 00	L'Assomption Railway, Quebec.....	11,200 00
49 " 10	32,000 00		
50-1 " 24	96,000 00	} Great Eastern Railway, Quebec.....	40,345 00
56 " 2	64,000 00		
53 " 2	37,500 00		
17 " 8		} Irondale, Bancroft and Ottawa Railway, Ontario.....	144,000 00
52 " 3	160,000 00		
49 " 10	96,000 00		
50-1 " 24	6,400 00	} Buctouche and Moncton Railway, N.B.....	101,600 00
47 " 8			
52 " 3	51,200 00		
56-1 " 24	65,200 00	} Lake Temiscamingue Colonization Railway, Quebec..	310,335 95
57-8 " 4	274,940 00		
49 " 10	38,400 00		
50-1 " 24	4,000 00	} Joggins Railway, N.S.....	37,500 00
45 " 14	240,000 00		
48-9 " 58	258,000 00		
51 " 3	100,000 00	} Temiscouata Railway, N.B., and Quebec.....	645,950 00
53 " 2	51,200 00		
48-9 " 59	44,800 00		
50-1 " 24	6,400 00	} Leamington and Saint Clair Railway, Ontario.....	51,200 00
49 " 10	16,000 00		
50-1 " 24	22,400 00		
49 " 10		} Dominion Lime Co., Quebec.....	15,360 00
53 " 2	256,000 00		
50-1 " 24	96,000 00		
52 " 3	14,400 00	} Drummond County Railway, Quebec.....	423,936 00
53 " 2	76,800 00		
57-8 " 4	96,000 00		
48-9 " 59	128,000 00	} Brockville, Westport and Saut Ste. Marie Ry., Ont..	105,200 00
53 " 2			
54-5 " 8	64,000 00		
57-8 " 4		} Montreal and Lake Maskinongé Railway, Quebec....	41,280 00
49 " 10	32,000 00		
53 " 2	10,200 00		
50-1 " 24	54,400 00	} South Norfolk Railway, Ontario.....	54,400 00
50-1 " 24	51,200 00		
48-9 " 59			
49 " 10	22,400 00	} Belleville and North Hastings Railway, Ontario.....	21,888 00
49 " 10	108,800 00		
52 " 3	48,000 00		
50-1 " 24	118,400 00	} Hereford Railway, Quebec.....	155,200 00
55-6 " 5	224,000 00		
62-3 " 7	*		
50-1 " 24	62,400 00	} Lake Erie and Detroit River Railway Ontario.....	475,851 00
56 " 2			
50-1 " 24	138,400 00		
55-6 " 5	108,000 00	} St. Catharine and Niagara Central Railway, Ontario..	38,400 00
57-8 " 4	108,800 00		
52 " 3	30,000 00		
50-1 " 24	9,600 00	} Fredericton and St. Mary's Railway Bridge Co., N.B..	30,000 00
55-6 " 5			
61 " 1	240,000 00		
50-1 " 24	44,800 00	} Harvey Branch Railway Co., N.B.....	5,553 57
52 " 3	19,200 00		
52 " 3	54,400 00		
63-4 " 8	*	} Thousand Islands Railway Co., Ontario.	29,840 00
		Carried forward.....	10,240,058 36

SESSIONAL PAPER No. 20

been entered into and Payments made up to March 31, 1909—*Continued.*

PAYMENTS.							Total, March 31, 1909.
1902-03.	1903-04.	1904-05.	1905-06.	1906-07.	1907-08.	1908-09.	
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
37,777 20			86,016 00	67,712 00	385,981 09	55,449 60	7,084,748 73
							113,440 00
							217,600 00
							11,200 00
							40,345 00
							144,000 00
							101,600 00
							50,460 00
							310,335 95
							37,500 00
							645,950 00
							51,200 00
							14,656 00
							15,360 00
							256,000 00
							423,936 00
				35,600 00			140,800 00
							41,280 00
							54,400 00
							46,000 00
							21,888 00
							155,200 00
							475,851 00
							62,400 00
							38,400 00
							30,000 00
							5,553 57
							235,200 00
							39,850 00
							13,600 00
							29,840 00
37 777 20			86,016 00	103,312 00	385,981 09	55,449 60	10,908,594 25

9-10 EDWARD VII., A. 1910

STATEMENT showing Subsidies voted for Railways as to which Contracts have

SUBSIDIES VOTED.		RAILWAYS.	
Authority.	Amount.		July 1, 1883, to June 30, 1902.
	\$ cts.		\$ cts.
		Brought forward.	15,134,137 18
60-61 Vic., c. 5	3,630,000 00	Canadian Pacific Railway Co., B.C. (Crow's Nest Pass)	3,321,774 00
60-61 " 4	500,000 00	Grand Trunk Ry. Co., "Victoria Jubilee Bridge," Que.	500,000 00
63 " 3		International Ry. of New Brunswick formerly Resti-	
" "	"	gouche and Western Ry. Co.	46,930 00
" "	"	East Richelieu Railway Co., Quebec.	69,952 00
" "	"	South Shore Railway, (Quebec, Montreal and Southern)	119,290 19
" "	"	Pembroke Southern Railway, Ontario.	64,000 00
" "	"	Massawippi Valley Railway Co., Quebec.	5,376 00
" "	"	Inverness and Richmond Co., N.S., now Inverness Ry.	
" "	"	and Coal Co.	219,600 00
" "	"	Canadian Northern Railway Co., Ontario, Manitoba	
" "	"	and N.W.T.	1,477,491 00
" "	"	Canadian Pacific Railway Co. (Pipestone Branch).	160,000 00
" "	"	Central Ontario Railway Co., Ontario.	67,200 00
" "	"	Midland Railway Co., N.S.	170,264 00
62-3 Vic., c. 7	1,000,000 00	Quebec Bridge Co., Quebec.	242,000 00
63-4 " 8		St. Mary River Railway Co., N.W.T.	75,000 00
" "	"	Pontiac and Pacific and Ottawa and Gatineau Ry.	
60-1 Vic., c. 4	212,500 00	Co. (Interprovincial Bridge over Ottawa River).	212,500 00
63-4 " 2		Atlantic and Lake Superior Railway, Quebec.	14,800 00
1 Ed. VII., c. 7	"	Montreal and Province Line Railway, Quebec.	58,560 00
62-3 Vic., c. 7	"	York and Carleton Railway, N.B.	15,336 00
62-3 " 7	"	Algoma Central and Hudson Bay Railway, Ontario.	380,624 00
63-4 " 8		Cape Breton Extension Railway, N.S.	
1 Ed. VII., c. 7	"	Can. Pacific Ry. Co. (Kootenay and Arrowhead Br'ch).	
" "	"	(Selkirk Branch).	
" "	"	" (Dymont Branch).	
" "	"	" (Waskada Branch).	
" "	"	Manitoulin and North Shore Railway Co., Ont.	
" "	"	Bay of Quinté Railway, Ont.	
" "	"	Bruce Mines and Algoma Railway, Ont.	
" "	"	Magapetawan River Railway Co., Ont.	
" "	"	The Canadian Northern Quebec Ry., formerly Chateau-	
" "	"	gnay and Northern Ry., Quebec.	
" "	"	Canadian Pacific Ry. Co. (Pheasant Hill Branch).	
" "	"	Halifax and South-western Railway Co. N.S.	
" "	"	Northern Colonization Railway Co., Quebec.	
" "	"	New Brunswick Coal and Railway Co. N.B.	
" "	"	Schomberg and Aurora Railway Co., Ont.	
" "	"	Lindsay, Bobcaygeon and Pontypool Ry. Co., Ont.	
" "	"	Middleton and Victoria Beach Ry. Co., N.S.	
" "	"	Beersville Coal and Railway Co., N.B.	
3 Ed. VII., c. 57	"	Nicola, Kamloops and Similkameen Coal and Ry. Co.	
4 " 34	"	Canadian Pacific Railway (Staynerville Branch).	
6 " 43	"	Klondike Mines Railway.	
6 " 43	"	Kettle River Valley Ry. Co., B.C.	
6 " 43	"	Colchester Coal and Ry. Co., N.S.	
3 " 57	"	Minudie Coal Co., N.S.	
6 " 43	"	Atlantic, Quebec and Western Ry. Co., Quebec.	
6 " 43	"	Napierville Jct. Ry. Co., Quebec.	
6-7 " 40	"	Edmonton, Yukon and Pacific Ry. Co., Alberta.	
6-7 " 40	"	Canadian Northern Ontario Ry. Co., formerly James	
		Bay Ry. Co., Ont.	
		Carried forward.	22,380,780 37

† Of this amount \$16,164 43 were in connection with subsidy to Montreal and Sorel Railway.

SESSIONAL PAPER No. 20

been entered into and Payments made up to March 31, 1909—*Continued.*

PAYMENTS.							Total March 31, 1909.
1902-1903.	1903-1904.	1904-1905.	1905-1906.	1906-1907.	1907-1908.	1908-1909.	
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
141,937 20	131,968 00	38,250 00	131,780 50	103,312 00	414,352 29	55,449 60	16,151,186 77
60,000 00							3,404,720 00
							500,000 00
	30,208 00		50,070 07	51,200 00		189,849 60	368,257 67
						43,414 55	69,952 00
	80,494 16	3,456 46					1216,655 36
							64,000 00
							5,376 00
91,775 53	57,170 44						368,545 97
57,485 00	374,156 00						1,909,132 00
							160,000 00
190,186 30	1,750 00			4,967 70	76,861 36	35,404 64	179,466 00
132,353 33					31,892 40		399,060 40
	40,960 00	32,134 00					371,353 33
							148,094 00
							212,500 00
52,353 98	37,000 00	42,336 86		1,521 82			144,969 02
							58,560 00
					14,560 00		32,896 00
202,912 00		341,440 00					924,976 00
65,280 00	117,120 00						182,400 00
42,771 00	17,812 85	4,176 15	89,076 00				153,866 00
83,200 00							83,200 00
22,336 00							22,336 00
50,480 00	13,520 00						64,000 00
32,000 00							32,000 00
19,200 00	49,920 00			72,602 45			141,722 45
28,800 00		25,120 00					53,920 00
3,552 00							3,552 00
	191,595 00		116,000 00	84,224 75			391,819 75
	378,624 00	56,576 00					435,200 00
	185,422 00	291,842 00	176,512 00	268,107 20	316,567 73		1,238,450 93
	58,384 00		75,376 00			68,320 00	202,080 00
	48,000 00						48,000 00
	46,144 00						46,144 00
		185,173 06					185,173 06
		47,789 00	50,303 80	27,667 20			125,760 00
		20,735 00					20,736 00
			110,592 00		190,208 00		300,800 00
				9,600 00	3,424 00		13,024 00
				96,000 00	101,184 00		197,184 00
					97,771 52		97,771 52
					12,800 00		12,800 00
					18,544 00		18,544 00
					64,000 00	92,672 00	156,672 00
					173,440 00		173,440 00
					91,200 00		91,200 00
			651,264 00	420,608 00	244,224 00	556,864 00	1,872,960 00
1,276,622 34	1,860,278 45	1,089,029 53	1,450,974 37	1,136,767 48	1,851,029 30	1,041,974 39	32,087,456 23

a Amount actually paid after deductions amounting to \$1,521.82 made in 1905-06 (being for refunds, duplicate claims, &c.) from the total of \$146,490.84, previously reported, for which cheques had issued.

‡ Refunds for duplicate claims and claims still unpaid.

9-10 EDWARD VII., A. 1910

STATEMENT showing Subsidies voted for Railways as to which Contracts have

SUBSIDIES VOTED.		RAILWAYS.	July 1, 1883 to June 30, 1902.
Authority.	Amount.		
	\$ cts.		\$ cts.
		Brought forward.....	22,380,780 37
7-8 Ed. VII., c. 63	*	Maritime Coal and Ry. Co.....	
7-8 " 63	*	St. Mary and Western Ontario Ry. Co.....	
7-8 " 63	*	North Shore Ry. Co.	
7-8 " 63	*	St. Maurice Valley Ry. Co.....	
7-8 " 63	*	Grand Trunk Pacific Ry. Co.	
			22,380,780 37
	186,600 annually for 20 years.	Atlantic and North-western Railway.....	2,425,800 00
37 Vic., ch. 14	1,525,250 00	Canada Central Railway.....	1,525,250 00
46 " 2			
47 " 8	1,500,000 00	Canadian Pacific, extension.....	1,500,000 00
48-9 " 58			
		Totals.....	27,831,830 37

* 60-61 Victoria, Cap. 4, 62-63 Victoria, Cap. 7, 63-64 Victoria, Cap. 8, 1 Edward VII, Cap. 7, 40, and 7-8 Edward VII., Cap. 63, authorize \$3,200 per mile subsidy if the cost does not average of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, July 2, 1909.

SESSIONAL PAPER No. 20

been entered into and Payments made up to March 31, 1909—*Concluded.*

PAYMENTS.							Total March 31, 1909.
1902-1903.	1903-1904.	1904-1905	1905-1906.	1906-1907.	1907-1908.	1908-1909.	
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1,276,622 34	1,860,278 45	1,089,029 53	1,450,974 37	1,136,767 48	1,851,029 30	1,041,974 39	32,087,456 23
.....	.....	.....	.....	.....	.....	3,200 00	3,200 00
.....	.....	.....	.....	.....	.....	67,344 00	67,344 00
.....	.....	.....	.....	.....	.....	6,880 00	6,880 00
.....	.....	.....	.....	.....	.....	112,640 00	112,640 00
.....	.....	.....	.....	.....	.....	367,249 00	367,249 00
1,276,622 34	1,860,278 45	1,089,029 53	1,450,974 37	1,136,767 48	1,851,029 30	1,599,287 39	32,647,769 23
.....							
186,600 00	186,600 00	186,600 00	186,600 00	186,600 00	186,600 00	186,600 00	3,732,000 00
.....	.....	.....	.....	.....	.....	.....	1,523,250 00
.....	.....	.....	.....	.....	.....	.....	1,500,000 00
1,463,222 34	2,046,878 45	1,275,629 53	1,637,574 37	1,323,367 48	2,037,629 30	1,785,887 39	34,402,019 23

3 Edward VII., Cap. 57, 4 Edward VII., Cap. 34, 6 Edward VII., Cap. 43, 6-7 Edward VII., Cap. more than \$15,000 per mile, if over that amount, a further sum of fifty per cent on so much exceeding in the whole the sum of \$6,400 per mile.

W. C. LITTLE,
Accountant.

PART II

STATEMENTS

OF THE

DEPARTMENTAL SOLICITOR

FOR THE YEAR 1908-'09

SHOWING

- (1) Guarantee agreements entered into for railway construction.
- (2) Money subsidy agreements with railway companies.
- (3) Contracts entered into during the year.
- (4) Leases of water-powers and properties granted.
- (5) Property conveyed by the Crown and lands conveyed to the Crown.
- (6) Damages released.

GUARANTEE AGREEMENTS for the Construction of Railways

Number of Agreement.	Date of Signature.	Railway Company.	Line of Railway.
17331	Oct. 21, 1908	Canadian Northern Rail- way Company.	(1) From Regina to Western boundary of Manitoba . . . (2) From Saskatoon towards Calgary..... (3) From Prince Albert to Battleford..... (4) From Western boundary of Manitoba towards Ros- thern. (5) An extension of the Rossburn line from the Western boundary of Manitoba, in a northwesterly direc- tion.

SESSIONAL PAPER No. 20

entered into during the fiscal year ended March 31, 1909.

AUTHORITY FOR EXECUTION.		Amount of Guarantee.	No. of Miles Covered by Agreement.
Act of Parliament.	Order in Council.		
Can., 1908, c. 11	Oct. 9, 1908.	Principal and interest on securities to the extent of \$13,000.00 per mile.	(1) 150 43-100 miles. (2) 175 miles. (3) 132 miles. (4) 100 miles. (5) 50 miles.

H. F. ALWARD,
Departmental Solicitor.

9-10 EDWARD VII. A. 1919

SUBSIDY AGREEMENTS for the construction of Railways

No. of Contract.	Date of Signature.	Railway Company.	Line of Railway or work Subsidized.	AUTHORITY FOR EXECUTION.	
				Act of Parliament.	Order in Council.
17349	Oct. 26, 1908	Canadian Northern Quebec Ry. Co.	From point at or near Arundel to point in municipality of United Townships of Preston and Hartwell 30 miles; and for line connecting its Montfort & Gatineau line with the main line at St. Jérôme, 15 2 miles.	Can., 1908, c. 63	Aug. 31, 1908.
17479	Jan. 8, 1909	Canadian Pacific Railway Company.	From Moosejaw in a northwesterly direction.	Can., 1908, c. 63	Dec. 13, 1908.
17495	Jan. 23, 1909	Canadian Northern Ontario Ry. Co.	From Toronto via the E. side of Lake Simcoe to a point at, near or beyond Sudbury, through Parry Sound.	Can., 1907, c. 40	Dec. 10, 1908.
17513	Feb. 4, 1909	"	From Sudbury Junction to Hutton Mines.	Can., 1908, c. 63	Jan. 18, 1909.
17151	May 27, 1908	Esquimalt & Nanaimo Ry. Co.	From Wellington to or towards Union Bay by way of Alberni.	Can., 1907, c. 40	Mar. 30, 1908.
17337	Oct. 19, 1908	Grand Trunk Pacific Ry. Co.	Branch lines from line of National Transcontinental Railway to Port Arthur and Fort William.	Can., 1908, c. 63	Oct. 9, 1908.
17238	Aug. 24, 1908	International Ry. Co. of New Brunswick.	From western end of the 20 miles as already constructed from Campbellton, to point on St. John River.	Can., 1908, c. 63	Aug. 3, 1908.
17330	Oct. 23, 1908	Kettle River Valley Ry. Co.	From Carmi to Penticton.	Can., 1908, c. 63	Oct. 22, 1908.
*17273	June 3, 1907	Midway and Vernon Ry. Co.	From Midway to Vernon.	Can., 1907, c. 40	May 6, 1907.
17412	Dec. 2, 1908	Maritime Coal, Railway & Power Co.	From Joggins' Mines to point on Bay of Fundy.	Can., 1908, c. 63	Nov. 14, 1908.
17461	Dec. 31, 1908	Margaree Coal & Railway Co., Ltd.	From point at or near Orangedale on I. C. Ry., etc.	Can., 1908, c. 63	Dec. 19, 1908.
17446	Dec. 22, 1908	North Shore Ry. Co.	From Main line to Mount Carlyle.	Can., 1908, c. 63	Nov. 21, 1908.
17530	Feb. 25, 1909	Quebec, Montreal & Southern Ry. Co.	From Yamaska to point in county of Lotbinière and from Mount Johnson to St. Grégoire Station.	Can., 1908, c. 63	Dec. 5, 1908.
17289	Oct. 2, 1908	St. Maurice Valley Ry. Co.	From Three Rivers to Grand Merc.	Can., 1908, c. 63	Aug. 11, 1908.
17296	Oct. 3, 1908	St. Mary's and Western Ont. Ry. Co.	From Woodstock to Exeter.	Can., 1908, c. 63	Sept. 26, 1908.
17433	Dec. 7, 1908	Vancouver & Lulu Island Railway.	From Eburn on its main line to New Westminster.	Can., 1908, c. 63	Nov. 6, 1908.

*Too late for last year's report.

SESSIONAL PAPER No. 20

entered into during the fiscal year ended March 31, 1909.

AMOUNT OF SUBSIDY.		Number of Miles Subsidized.	Maximum Grade Feet per Mile.	Radius of Curva- ture not less than	Width of Clear- ing each side.	Width of Cut- ting.	Embankment.	Steel Rails, lbs. per lineal yard.	Date for Completion.	
Per Mile.	Not exceed- ing.									
\$	\$		Feet	Feet.	Feet.	Feet.	Feet.	Lb.		
3,200	6,400	43.2	52.80	859.9	50	20	15	56	Aug.	1 1908
3,200	6,400	123	52.80	1,433	50	20	14	56	Dec.	31, 1910
3,200	6,400	2.5	52.80	8°	50	20	15	56	Dec.	31, 1909
3,200	6,400	30	40	574	50	20	15	56	Dec.	31, 1909
3,200	6,400	55	80	573	50	20 1	14	56	Aug.	1, 1911
3,200	6,400	220	31.68	955.4	50	20	15	80 used.	Dec.	1, 1910
3,200	6,400	90	80	573	50	20	15	56	Aug.	1, 1910
3,200	6,400	50	24	573	50	20	15	56	Aug.	1, 1912
3,200	6,400	150	106	478	50	20	15	56	Dec.	1, 1909
3,200	6,400	1	85	1146	50	20	15	56	Apl.	1, 1909
3,200	6,400	50	80	1,146	50	20	15	56	Dec.	31, 1910
3,200	6,400	2½	105.6	819	50	20	15	56	Aug	31, 1909
3,200	6,400	71½	16	4,000	50	20	15	56	Aug.	1, 1910
3,200	6,400	28	70	575.7	50	20	15	56	July	31, 1910
3,200	6,400	45	52.80	716.8	60	20	15	56	Oct.	1, 1910
3,200	6,400	9.65	26	1,146	50	20	14	56	Mar.	31 1909

H. F. ALWARD,
Departmental Solicitor.

9-10 EDWARD VII., A. 1910

CONTRACTS entered into during the Fiscal Year ended March 31, 1909.

INTERCOLONIAL RAILWAY.

No. of Contract.	Date of Signature.	Contractors.	Description.
1908.			
1707	Apl. 1.	J. W. Dobson.....	Construct concrete bridge masonry at Pine Tree Creek, N.S.
17070	" 2.	Silliker Car Company, Ltd.....	Deliver 50, 60,000-lbs. box cars.
17071	" 2.	Hamilton Bridge Works, Co., Ltd..	Deliver Pine Tree, Upper Cross Creek and Subway Bridges.
17085	" 7.	Rhodes, Curry & Company.....	Deliver 1800, 33 in. car wheels.
17088	" 14.	S. S. Ryan.....	Deliver Hard Pine Timber for 1908.
17099	" 22.	Reid and Archibald.....	Erect bridge at Renous River, N.S.
17100	" 22.	J. W. Dobson.....	Construct hard pine trestle bridge at Sydney, N.S.
17130	May 11.	A. Peveril.....	Erect fencing on District 10, Dartmouth to Windsor, N.S.
17131	" 12.	J. H. Holmes & H. W. Holmes....	Erect fencing on District 14, Loggieville to Fredericton, N.B.
17136	Apl. 11.	J. L. Richardson.....	Deliver 500, 33 in. cast iron chilled wheels.
17137	May 13.	The Shives Lumber Company.....	Construction and operation of sidings at Athol Mills, N.B.
17150	" 29.	Dominion Coal Company, Ltd.....	For construction of a hard pine trestle bridge to replace overhead through plate girder bridge and wooden trestle and for raising of present embankment at Sydney, C.B.
17161	June 6.	Zenon Ouellet.....	Erect extension to freight shed and platform at Ste. Flavie, Que.
17163	" 8.	Rhodes, Curry & Company.....	Deliver 70 cast iron chilled wheels for snow-ploughs.
17175	" 23.	Canada Electric Company, Ltd.....	Wiring of station and platform at Amherst, N.S.
17176	" 26.	Cloutier & Gaudreau.....	Erect suspension foot bridge at Rivière du Loup, Que.
17182	July 2.	Canadian Iron & Foundry Co.....	Deliver 2,700, 33 in. cast iron chilled wheels.
17216	" 25.	City of Sydney.....	Supply water.
17217	" 27.	Crossen Car Co.....	Deliver 3, vestibule, 2nd-class sleeping cars.
17223	Aug. 5.	Dominion Car & Foundry Co.....	100 all steel Otis-Side-Dump cars.
17227	" 5.	Wm. P. McNeil Co.....	Deliver 2, 75-foot, through turntables.
17230	" 8.	Cloutier & Gaudreau.....	Erect dwelling house for agent at Ste. Rosalie, Que.
17234	" 24.	Rhodes, Curry & Company.....	Deliver 4 2nd-class sleeping cars.
17237	" 24.	New Brunswick Wire Fence Co., Ltd.	Erect fencing on Districts Ste. Rosalie to Chaudière, etc.
17239	" 28.	Emile Dubé.....	Construct basement, etc., for new train service building at Chaudière Jet.
17241	" 28.	McNeil & McLellan.....	Construct car cleaners' building at Sydney Mines, C.B.
17257	Sept. 10.	McTomney & Craig.....	Installation of water closets and toilet accommodation in station building at Bathurst, N.B.
17259	" 15.	Jos. Goulett & Jas. Culligan, Jr....	Erection of freight shed and platform at Campbellton, N.B.
17278	" 28.	Cloutier & Gaudreau.....	Erect addition to station at De Lotbinière, Que.
17279	" 28.	Zenon Ouellet.....	Erect brick oil house at Campbellton, N.B.
17281	" 28.	Jos. Goulett and Jno. H. Goulett...	Erect extension to freight shed and platform at St. Jean Port Joli, Que.
*17283	Mch. 23.	Town of Lewis.....	Supply water.
17281	Sept. 30.	P. Campbell & Co.....	Installation of hot water heating plant in station building at Norton, N.B.
17295	Oct. 2.	Whiting Foundry Equipment Co.....	Supply and erect one hand power travelling crane in new power house at Moncton, N.B.
17302	" 5.	Emil A. Wallberg.....	Erect boiler room at new engine house at Halifax, N.S.
17305	" 10.	H. G. Hagen.....	Install hot water heating plant in station building at Springhill Jct., N.S.
17317	" 15.	Clarence E. Reid.....	Enlarge existing freight shed and install heating apparatus in station at Pugwash, N.S.
17319	" 17.	Jno. McInnes & Son, Ltd.....	Erect new freight telegraph office at Jct. of Halifax and Southwestern Railway with I. C. Ry at Halifax, N.S.
17326	" 5.	Silliker Car Co.....	Deliver 3 vestibule 2nd-class sleeping cars.
17327	" 20.	Polson Iron Works, Ltd.....	Supply and erect steam boiler at Newcastle, N.B.
17336	" 23.	Robert L. Young.....	Erect combined station and freight shelter at Zionville, N.B.
17348	" 24.	Robert S. Low.....	Construct concrete platforms at Amherst, Antigonish and Sackville stations.
17350	" 24.	Canadian Iron & Foundry Co., Ltd..	Supply 2,000 33 in. car wheels.

SESSIONAL PAPER No. 20

CONTRACTS entered into During the Fiscal Year, &c.—*Continued.*

INTERCOLONIAL RAILWAY.

No. of Contract.	Date of Signature.	Contractors.	Description.
1908.			
17368	Nov. 2	Jos. & Jas. A. Goulett.....	Erect freight shed at Beaver Brook, N.B.
17369	" 2	Jas. A. Goulett.....	Erect freight shed and platform at Bathurst, N.B.
17374	" 7	F. L. Dixon.....	Erect coal shed and trestle at Mulgrave, N.S.
17391	" 20	Canadian General Electric Co., Ltd...	Install electric lighting plant at Stellarton, etc.
17395	" 20	H. Swim and F. D. Swim.....	Erection of combined freight shed and baggage and oil room and enlargement of station at Doaktown, N.B.
17396	" 23	Cloutier & Gaudreau.....	Extension to freight shed and platform at St. Romuald, Que.
17399	" 25	B. F. Sturtevant Co.....	Supply and install hot air heating apparatus in new shops at Moncton, N.B.
17408	Dec. 2	Builders' Woodworking Co., Ltd...	Erect freight house at Sackville, N.B.
17409	Nov. 23	Geo. St. Pierre & Co.....	Brick stores and office building at Rivière du Loup, Que.
17417	Dec. 10	R. L. Young.....	Erect freight shed and addition to station at Cross Creek.
17418	" 9	S. B. Fournier.....	Install hot water heating plants in station buildings at Matapedia and Amqui, Que.
17421	" 12	Florian Dumont.....	Erection of extension to existing freight shed at St. Eloi, Que.
17423	" 12	J. H. McKay.....	Construction and erection of a combined station and dwelling at Scoudouc, N.B.
17425	" 12	Fred. Forrester.....	Erection, etc., of an addition to station at Bloomfield N.B.
17426	" 10	Frank W. Wilson.....	Construction of highway and cribwork protection to Leper Brook at Truro, N.S.
17443	" 19	Auguste C. Lavoie	Erection of combined station, dwelling and platforms at MacKenzie, Que.
17445	" 22	Emil A. Wallberg.....	Erect steam heating plant in freight car repair shop, planing mill, stores and office building and oil house at Halifax, N.S.
17447	" 22	Frank Wilson.....	Install heating system in Superintendent's dwelling at Campbellton, N.B.
17448	" 22	Frank Wilson.....	Extension to water supply system at Mulgrave, N.S. and Campbellton, N.B.
17449	" 22	Joseph Gosselin.....	Erect car repair shop at Chaudière Jet.
17453	" 24	St. John Iron Works, Ltd.....	Erect iron smoke stack on engine house at St. John, N.B.
1909.			
17462	Jan. 9	Thos. R. Anderson & Ephraim Le Blanc.....	Erect station, dwelling, freight room and platforms at Upper Blackville, N.B.
17463	" 9	Zenon Ouellet.....	Erect extension to freight shed and platform at Rimouski, Que.
17474	" 12	Cloutier & Gaudreau.....	Erection of combined freight and baggage building and a combined coal oil and privy building with necessary platforms at St. Cyrille, Que.
17477	" 11	Shedden Forwarding Co., Ltd.....	For the cartage of freight in the City of Montreal, Que.
17478	" 9	Rhodes, Curry & Company.....	Erect brick car repair shop and planing mill at Halifax, N.S.
17485	" 18	A. Thomas & Son.....	Smoke stack at Chaudière Jet.
17518	Feb. 1	Quebec & Levis Ferry Co., Ltd.....	For transfer of baggage and mails from Levis to Quebec and vice-versa, and for the transfer of freight and ice at Levis
17519	" 1	Oxford Foundry and Machine Co..	Installation of a hot water heating apparatus and water closets in the station at Oxford, N.S.
17528	" 18	Zenon Ouellet.....	Erection of ice house at Ste. Flavie, Que.
17531	" 18	Frank E. Jones.....	Electric wiring freight sheds at St. John, N.B.
1908.			
17532	July 1	Employers' Liability Assurance Co. Ltd.	Insuring His Majesty's property against loss and damage through the dishonesty or neglect of duty of certain of his employees or officers.
1909.			
17566	Mch. 10	Chappell Bros. & Company, Ltd....	Remodelling and enlarging station at Boiesdale, N.B.
17600	" 22	Canada Foundry Company, Ltd....	Supply, etc., 6 steam boilers, 3 at Halifax and 3 at Rivière du Loup.
17602	" 24	S. S. Ryan.....	Deliver Long Leaf Southern Hard Pine Timber for 1909.
17608	" 27	J. A. Blouin.....	Erection of fencing along line of I. C. Ry.
17609	" 27	Modern Steel Structural Company.	Supply, etc., Two 60-ton, 4-motor, electric travelling cranes at Rivière du Loup, Que.

9-10 EDWARD VII., A. 1910

CONTRACTS entered into During the Fiscal Year, &c.—*Continued.*

PRINCE EDWARD ISLAND RAILWAY.

No. of Contract.	Date of Signature.	Contractors.	Description.
1908.			
17212	July 25.	Peter G. Clark.....	Erect station at Belle River.
17213	" 25.	M. F. Schurman & Co., Ltd.....	Erect stations at St. Nicholas, Portage, etc.
17258	Sept. 19.	J. M. Clark.....	Erect extension to freight shed at Souris.
17260	" 19.	Thomas Campbell.....	Construct spur line to Ballast Pit at Surrey.
17285	July 4.	Canada Foundry Company.....	Supply and erect two steam boilers in connection with power house at Charlottetown.
1909.			
17574	Mch. 13.	Canadian Westinghouse Co., Ltd....	Power plant for railway at Charlottetown.

BEAUHARNOIS CANAL.

1909.			
17480	Jan. 7.	Cossette & Clermont.....	Construct works to protect Hungry Bay Dyke.

CARILLON CANAL.

1908.			
17398	Nov. 28.	Quinlan, Robertson and Haney....	Closing up gap in Carillon Dam.

CHAMBLY CANAL.

1908.			
17436	Dec. 15	Jno. G. Poupore & Co.....	Execution of certain works of improvement in the harbour at St. John's, P.Q., at the upper entrance of the Chamby Canal.

CORNWALL CANAL.

1908.			
17211	July 25	Jno. Inglis & Co., Ltd.....	Delivery of a steel gate lifter.
17231	Sept. 15	Thos. A. Nicholson.....	Repairing canal washout.
17303	Oct. 10.	International Portland Cement Co.	Deliver 8,000 barrels of Portland Cement.
17389	Nov. 18	J. J. & V. S. Fallon.....	Trimming slopes of canal and placing of concrete and stone protection wall at water line on the north side of canal, west of Guard Lock No. 21.
1909.			
17540	Mch. 6.	Vulcan Portland Cement Co., Ltd..	Deliver 1,750 barrels of cement.
17568	" 10.	Lakefield Portland Cement Co.....	Deliver cement for Cornwall Canal, etc., etc.

LACHINE CANAL.

1908.			
17039	Apl. 1	Quinlan & Robertson.....	Raising of part of St. Gabriel Basin No. 1.
17103	" 20	Quinlan & Robertson.....	Underpinning and reconstructing wall of side Basin No. 1 and N. wall of Basin No. 2, also paving wharf behind walls.
17148	May 26.	Lakefield Portland Cement Co., Ltd.	Deliver 35,000 barrels of cement.
17291	Oct. 1	Vulcan Portland Cement Company.	Deliver 10,000 barrels of cement.
17351	" 24.	Vulcan Portland Cement Company.	Deliver 20,000 barrels of cement.
17352	" 24.	Canadian General Development Co.	Construct concrete walls and widen canal at St. Henri, P.Q.
1909.			
17540	Mch. 6.	Vulcan Portland Cement Co.....	Deliver 43,500 barrels of cement.
17573	" 8.	Phoenix Bridge & Iron Works, Ltd..	Erect machine shop on Mill Street, Montreal.

SESSIONAL PAPER No. 20

CONTRACTS entered into during the Fiscal Year, &c.—*Continued.*

RIDEAU CANAL.

No. of Contract.	Date of Signature.	Contractors.	Description.
	1908.		
17087	Apl. 14.	Ottawa Lumber Company.....	Timber for 1907-1908.
17177	June 23.	International Portland Cement Co.	Deliver 1,500 barrels Portland Cement.
	1909.		
17538	Mch. 10	Lakefield Portland Cement Co., Ltd.	Deliver cement for Rideau and other canals.

SAULT STE. MARIE CANAL.

	1908.		
17444	Dec. 22	Roger Millar & Sons.....	Construct one pair upper main gates for lift lock of canal.
	1909.		
17535	Mch. 10	Owen Sound Portland Cement Co. Ltd.	Deliver 175 barrels Portland Cement.

SOULANGES CANAL.

	1908.		
17101	Apl. 15	Beauchemin & Co.....	Deliver a steel gate lifting scow.
17124	" 25	Phoenix Bridge & Iron Works, Ltd.	Deliver steel derrick for lifting lock gates of canal.
17415	Dec. 12	Haney, Quinlan & Robertson.....	Lining with concrete certain portions of canal banks.

TRENT CANAL.

	1908.		
17104	Apl. 24	Canadian General Development Co., Ltd.	Construct Section 3, Ontario-Rice Lake Division.
17105	" 24	Lakefield Portland Cement Co., Ltd.	Deliver 3,000 barrels of cement.
17107	" 24	Canadian Portland Cement Company	Deliver 12,800 barrels Portland Cement.
17123	May 2	Belleville Portland Cement Co.....	Deliver 10,000 barrels of cement.
17158	Apl. 3	Dennon & Rogers.....	Construct Section 2, Ontario-Rice Lake Division.
17188	July 7	Belleville Portland Cement Co.....	Deliver 6,000 barrels of cement.
17219	" 7	Lakefield Portland Cement Co.....	Deliver 5,000 barrels of cement.
17233	" 14	Lakefield Portland Cement Co.....	Deliver 6,000 barrels of cement.
17235	" 25	Canadian Portland Cement Co.....	Deliver 6,000 barrels of cement.
17282	Sept. 28	Hanover Portland Cement Co.....	Deliver 5,000 barrels of cement.
17308	Oct. 5	Dominion Bridge Co., Ltd.....	Supply and erect wagon valves for locks and weirs.
17314	" 10	Hamilton Bridge Works, Co., Ltd.	Erect steel highway drawbridges at Glen Millar, etc., and one single track steel railway bridge at Glen Ross.
17328	" 30	Belleville Portland Cement Co.....	Deliver 6,000 barrels of cement.
	1909.		
17456	Jan. 4	Randolph MacDonald Co., Ltd.....	Construct Section 7, Ontario-Rice Lake Division.
17503	" 20	Jno. Ritchie & Co.....	Construct the Lindsay Section.
17538	Mch. 10	Lakefield Portland Cement Co.....	Deliver Cement for Trent and other canals.

WELLAND CANAL.

	1908.		
17044	Apl. 1	The Paekard Electric Co., Ltd.....	Deliver 50, 5-K.W. and 5, 25-K.W. transformers.
17143	May 21	W. E. Phin	Remove slides 1 and 2 in deep cut on summit level.
17147	" 21	Cunningham & Son.....	Supply iron, brass and phosphor bronze castings for 1908.
17232	Aug. 24	M. J. Hogan.....	Deepening of deep water channel along W. pier of Port Colborne Entrance.
17280	Sept. 29	M. J. Hogan.....	Renewal of portion of W. pier at Port Maitland, Ont.
17410	Dec. 2	Joseph Battle.....	Construct dock on E. side of canal about 1½ miles south of town of Welland.
17424	" 12	Joseph Battle.....	Construct macadam roadway at Ramey's Bend.
	1909.		
17568	Mch. 10	Lakefield Portland Cement Co., Ltd.	Deliver cement for Welland and other canals.

*Too late for last year's report.

9-10 EDWARD VII., A. 1910

WATER POWER and other Public Property leased by the Department of
INTERCOLONIAL

No. of Lease.	Date of Signature.	Lessee.	Lands or Rights demised.
1908.			
17093	Apl. 18	John W. Logan.....	Land at Denmark, county of Colchester, N.S.
17117	May 1	Frank George.....	Land at Folleigh Station, N.S.
17118	" 1	Jos. H. Higgins.....	Land at Amherst, N.S.
17119	" 4	Geo. L. McLean.....	To lay, etc., one 1-inch galvanized iron pipe across lands and tracks of railway at Durham bridge, York county, N.B.
17157	" 18	Trueman Wbeaton.....	Land at Salisbury, N.B.
17224	Aug. 5	Imperial Oil Co.....	To lay, etc., a 24-inch cast iron pipe across lands and under tracks of railway at Bedford, N.S.
17288	Sept. 29	Dr. Henri Lunam.....	To erect, etc., telephone wire across right of way and over main line of railway about 2 miles east of Campbellton, N.B.
17297	Oct. 5	Robert Douglas.....	Land at Moncton, N.B.
17303	" 7	Antigonish & Sherbrooke Telephone Co., Ltd.	To erect, etc., telephone line near Poinquet Station, N.S.
17309	" 12	Bartholemew Rogers.....	To lay, etc., 6-inch sewer pipe across land and under tracks of railway at St. John, N.B.
17318	" 15	Milledge Vanbuskirk.....	Land at Harcourt, Kent county, N.B.
17419	Dec. 10	Ed. Banville.....	Land at Sayabee, County Rimouski, Que.
17430	" 4	G. T. Ry. Co. of Canada.....	Permission to use, jointly with His Majesty, the I.C.Ry. passenger station at Levis, and to run engines and trains over I.C.Ry. tracks between Point Levis and Levis.
17435	" 18	Jno. Fenderson & Co.....	Land at Sayabee, P.Q.
17455	" 22	Antoine Roy and Jos. McClure.....	Land at Isle Verte Station, Temiscouata Co., Que.
1909.			
17482	Jan. 16	Thos. S. Donaldson.....	To lay, etc., 2-inch iron water pipe across right of way at Birch Cove, N.S.
17496	" 25	Town of Sackville.....	To lay, etc., a 12-inch sewer at Sackville, N.B.
17535	Mar. 6	A. A. O'Donnell.....	Parcel of I. C. Ry. land at Carrol's Crossing, North- umberland Co., N.B.
17567	" 10	Dartmouth Ferry Commission.....	To lay, etc., 4-inch terra cotta pipe across lands and under tracks of railway at Dartmouth, N.S.

PRINCE EDWARD

1908.			
17089	Apl. 14	John Lyons.....	Land at Souris East.....
17240	July 20	James McAdam.....	Land at Southport.....
17304	Oct. 7	J. W. Brennan.....	Land on south side of railway wharf at Souris.....
1909.			
17481	Jan. 18	Department Marine and Fisheries..	To erect a boat house on railway land at Cascumpec Bay.....
17498	" 23	J. J. McQuaid.....	Lot or township No. 44, King's county.....

CARILLON

1908.			
17428	Dec. 12	Crawford Ross.....	The Old Carillon Canal: with lands and surplus water from the dam.

SESSIONAL PAPER No. 20

Railways and Canals during the Fiscal Year ended March 31, 1909

RAILWAY.

Area.	Amount of Water Power.	Term.	Commence- ment of Term.	TERMS OF PAYMENT.		
				Annual Rental.	Due each Year.	First Instalment Due.
				\$	cts.	
1,500 sq. ft.....		During pleasure	April 1, 1908.	5 00	Apl. 1	Apl. 1, 1908
0.9 ac.....		"	" 1, 1908.	1 00	" 1	" 1, 1908
1,377 sq. ft.....		"	" 1, 1908.	5 00	" 1	" 1, 1908
		"	" 1, 1908.	1 00	" 1	" 1, 1908
0.05 ac.....		"	May 1, 1908.	5 00	May 1	May 1, 1908
		"	Nov. 1, 1903.	5 00	Nov. 1	Nov. 1, 1903
		"	Sept. 1, 1908.	1 00	Sept. 1	Sept. 1, 1908
440 sq. ft.....		"	July 1, 1908.	1 00	July 1	July 1, 1908
		"	" 1, 1908.	1 00	" 1	" 1, 1908
		"	" 1, 1908.	1 00	" 1	" 1, 1908
0.51 ac.....		"	" 1, 1908.	1 00	" 1	" 1, 1908
208 sq. ft.....		"	Oct. 1, 1908.	1 00	Oct. 1	Oct. 1, 1908
		6 months.....	June 21, 1908.	6,000 00	Monthly \$500	July 19, 1908
5,548 sq. ft.....		During pleasure	Sept. 1, 1908.	2 00	Sept. 1	Sept. 1, 1908
5,000 sq. ft.....		"	Nov. 1, 1908.	1 00	Nov. 1	Nov. 1, 1908
		"	" 1, 1908.	1 00	" 1	" 1, 1908
		"	Dec. 1, 1908.	1 00	Dec. 1	Dec. 1, 1908
1,800 sq. ft.....		"	Nov. 1, 1908.	1 00	Nov. 1	Nov. 1, 1908
		"	Jan. 1, 1909.	1 00	Jan. 1	Jan. 1, 1909

ISLAND RAILWAY.

0.115 ac.....	During pleasure	Jan. 1, 1908.	1 00	Jan. 1	Jan. 1, 1908
3.11 ac.....	"	July 1, 1908.	18 50	July 1	July 1, 1908
	21 yrs., renewable.	" 1, 1908.	1 00	" 1	" 1, 1908
	During pleasure	Nov. 1, 1908.	1 00	Nov. 1	Nov. 1, 1908
352 sq. ft.....	"	" 1, 1908.	1 00	" 1	" 1, 1908

CANAL.

	21 years.....	Dec. 15, 1908.	\$100 land; \$2 per H. P.	Sept. 1 Mar. 1.	Sept. 1, 1908
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9-10 EDWARD VII., A. 1910

WATER POWER and other Public Property leased by the Department of Railways

CORNWALL

No. of Lease.	Date of Signature.	Lessee.	Lands or Rights demised.
	1908.		
17272	Sept. 9	Santa Clara Lumber Co.....	Land on north side of canal, west of point where O. & N. Y. Ry. crosses canal.....

GALOPS

	1909.		
17517	Feb. 4	Village of Iroquois.....	Part lot 21, con. 1, tp. Matilda, Co. Dundas, Ont., and privilege to erect buildings thereon; to lay water pipes through canal lands and take 100 H.P. of water.....
	1908.		
17583	Nov. 20	Mahlon F. Beach.....	Land at weir adjacent to lock 25, village of Iroquois, Ont.....

LACHINE

	1908.		
17078	Apl. 7	The Montreal Rolling Mills Co....	Old unused channel between island No. 5 and north bank of canal, with privilege to fill in premises in question.
17083	" 7	G. & J. Esplio.....	Storage lots Nos. 18 and 19 between St. Gabriel basins Nos. 2 and 3, Ste. Anne's Ward, Montreal, Que...
17086	" 8	Hugh F. Cummiog.....	Land on N.E. corner of St. Gabriel basin No. 1, Ste. Anne's Ward, Montreal, Que.
17090	Apl. 10	Hector Bourgoiun.....	Storage lot 7, between St. Gabriel Basins 3 and 4, Ste. Anne's Ward, Montreal, Que.....
17091	" 10	The John MacDougall Caledonian Iron Works Co., Ltd.	Land west of new St. Gabriel Basin No. 4, Ste. Anne's Ward, Montreal, Que.
17094	" 18	O. Dufresne, jr., & Frere.....	Storage lots 8 and 9, between St. Gabriel Basins 3 and 4, Ste. Anne's Ward, Montreal.....
17097	Apl. 16	Farquhar Robertson.....	Storage lots 13 and 14, between St. Gabriel Basins 2 and 3, Ste. Anne's Ward, Montreal.....
17113	" 22	Ogdensburg Coal and Towing Co....	Land on east side of St. Gabriel Basin No. 1, Montreal, with privilege to erect coal bins and derrick thereon.....
17114	" 22	" " "	Land on north side of canal in town of St. Henri, Montreal, with privilege to erect coal bins and coal elevator thereon.....
17126	" 29	Montreal and Southern Counties Railway.	To lay, etc., 2 electric cables across canal lands and under canal, east of Black's bridge, Montreal, and to erect two poles to receive said cables.....
17128	May 6	Montreal Rolling Mills Co.....	Lands covered with water, being part of waterway between Island No. 5 and north bank of canal; also right of filling in said part of waterway to connect island with mainland, etc....
17133	" 7	J. C. MacDiarmid.....	Storage lots Nos. 4 and 5 on New St. Gabriel Basin No. 4, Ste. Anne's Ward, Montreal.....
17134	" 11	Dominion Car and Foundry Co., Ltd.	To lay, etc., 18-inch water supply pipe and 14-inch return pipe from works at Blue Bonnets to canal, and draw water.....
17135	" 7	Wilson-Patterson Company.....	Lots 17 and 20, and certain wharf lot between St. Gabriel Basins 2 and 3, Ste. Anne's Ward, Montreal
17140	" 19	G. E. Jaques.....	Land on north side Basin No. 2; privilege to erect shed.
17144	" 14	Fred. J. N. Roy.....	Land above regulating weir at Lachine.....
17152	" 19	Canadian Pacific Railway Co.....	To lay, etc., an electric cable across canal lands and under canal on the south side thereof.....
17154	May 25	Public Wharf Scale Co.....	Land at Dock 2.....
17164	June 2	F. Tremblay & Co.....	Lots 3, 10, 11, 12, between St. Gabriel Basins 3 and 4, Ste. Anne's Ward, Montreal.....
17168	" 4	Montreal Rolling Mills Co.....	Land on northeast side of canal, near Brewster's bridge, etc., and privilege to erect, etc., a derrick and an elevated coal hopper thereon.....

SESSIONAL PAPER No. 20

and Canals during the Fiscal Year ended March 31, 1909, &c.—*Continued.*

CANAL.

Area.	Amount of Water Power.	Term.	Commencement of Term.	TERMS OF PAYMENT.		
				Annual Rental.	Due each Year.	First Instalment Due.
				\$	cts.	
1.24 ac.....		21 years.....	July 1, 1908.	50 00	July 1.	July 1, 1908

CANAL.

0.13 ac.....	100 H. P....	21 yrs., renewable.	Nov. 1, 1908.	250 00	Nov. 1	Nov. 1, 1908
0.077 ac.....		14 yrs., 8 months.	" 1, 1908.	5 00	" 1.	" 1, 1908

CANAL.

.....		21 years.....	Jan. 1, 1908.	100 00	Jan. 1.	Jan. 1, 1908
(16,912 sq. ft., 16,912 sq. ft.)		During pleasure.	July 1, 1908.	1,000 00	July 1	July 1, 1908
3,000 sq. ft.,		"	Jan. 1, 1908.	100 00	Jan. 1	Jan. 1, 1908
11,607 sq. ft....		During pleasure	" 1, 1908.	350 00	" 1	" 1, 1908
32,670 sq. ft....		"	" 1, 1908.	1,000 00	" 1	" 1, 1908
23,214 sq. ft....		"	Apl. 1, 1908.	700 00	Apl. 1	Apl. 1, 1908
14,967 sq. ft. }		"	" 18, 1908.	1,051 07	" 18	" 18, 1908
16,912 sq. ft. }						
11,125 sq. ft....		21 years.....	May 1, 1908.	445 00	May 1	May 1, 1908
4,200 sq. ft....		"	" 1, 1908.	168 00	" 1	" 1, 1908
.....		During pleasure.	Apl. 1, 1908.	20 00	Apl. 1	Apl. 1, 1908
.....		"	Mar. 20, 1908.	100 00	Mar. 20	Mar. 20, 1908
23,214 sq. ft....		"	July 1, 1907.	700 00	July 1	July 1, 1907
.....		"	May 1, 1908.	1,000 00	May 1	May 1, 1908
.....		10 years.....	Mar. 18, 1908.	1,227 00	Mar. 18	Mar. 18, 1908
10,044 sq. ft....		During "pleasure	May 1, 1908.	402 56	May 1	May 1, 1908
15,480 sq. ft....			Apl. 1, 1908.	92 88	Apl. 1	Apl. 1, 1908
.....		"	" 1, 1908.	10 00	" 1	" 1, 1908
400 sq. ft....		"	Mar. 20, 1908.	200 00	Mar. 20	Mar. 20, 1908
.....		"	Jan. 1, 1908.	1,285 00.	Jan. 1	Jan. 1, 1908
1,640 sq. ft....		"	May 1, 1908.	65 60.	May 1	May 1, 1908

9-10 EDWARD VII., A. 1910

WATER POWER and other Public Property leased by the Department of Railways

LACHINE

No. of Lease.	Date of Signature.	Lessee.	Lands or Rights demised.
1908.			
17183	June 15	Intercolonial Coal Mining Co.	Land at New Lock No. 2.
17184	" 15	Ontario and Quebec Navigation Co.	Privilege to occupy Flour Shed No. 2, between Flour Basins Nos. 3 and 4.
17190	July 2	Martin Frères & Co.	Storage lot 6, between St. Gabriel Basins Nos. 3 and 4, Ste. Anne's Ward, Montreal.
17223	Aug. 5	Wm. Rutherford & Sons Co., Ltd.	Land in municipality of St. Gabriel.
17242	" 14	Ogilvie Flour Mills Co.	Land on northwest side of Mill street and Cadastral Lot 1034 and part of lot 1065, Ste. Anne's Ward, Montreal.
17245	Sept. 1	J. Paquette.	Land at head of Flour Basin No. 4, Ste. Anne's Ward, Montreal.
17246	" 3	Thos. Léger.	To instal, etc., a floating platform on north shore of old canal at Lachine.
17253	" 8	Ottawa River Navigation Co.	Land on north wharf of Basin No. 2, Ste. Anne's Ward, Montreal, etc.
17254	" 3	Joachim Hogue.	Land on north wharf of Basin No. 2, Ste. Anne's Ward, Montreal, etc.
17255	" 4	Montreal and Cornwall Navigation Co., Ltd.	Wharf space on north wharf of Basin No. 2, etc.
17253	" 2	J. E. Robillard.	Wharf lot on northeast side of St. Gabriel Basin No. 1, Ste. Anne's Ward, Montreal, etc.
17262	" 8	Joseph Wilson.	Part northwest wharf of St. Gabriel Basin No. 2, Ste. Anne's Ward, Montreal, etc.
17274	" 9	Quinlan & Robertson.	Land at head of New St. Gabriel Basin No. 4, Ste. Anne's Ward, Montreal.
17275	" 9	Joseph Desrochers.	Land on north wharf of Basin No. 2, Ste. Anne's Ward, Montreal; privilege to erect freight shed and office thereon.
17236	" 8	Joseph Wilson.	Land on south side of canal, St. Gabriel Ward, Montreal.
17267	" 11	Montreal Sand and Gravel Co., Ltd.	Land on northwest wharf of St. Gabriel Basin No. 2, Ste. Anne's Ward, Montreal.
17269	" 9	Quinlan & Robertson.	Land on northeast side of Wellington Basin, Ste. Anne's Ward, Montreal.
17270	" 9	F. Tremblay & Co.	Land at head of new St. Gabriel Basin No. 3, Ste. Anne's Ward, Montreal.
17286	" 2	Dobell, Beckett & Co.	Land on southeast side of Wellington Basin, Montreal.
17287	" 19	Canada Paper Co.	Land at Wellington Basin, Ste. Anne's Ward, Montreal.
17290	" 28	A. Mallette.	Space in Flour Shed 1, Flour Basin 4, Ste. Anne's Ward, Montreal.
17310	Oct. 9	Wm. Rutherford & Sons Co., Ltd.	3 parcels of land on northeast side of canal, in St. Henri, Montreal.
17311	" 9	Montreal Rolling Mills Co.	Land on northwest side of canal in town of St. Cune-gonde, Montreal.
17312	" 7	D. O. Fortin.	A small island at Lachine, Que.
17313	Sept. 11	Chateauguay and Beauharnois Navigation Co.	Land on north wharf of Basin No. 2, Ste. Anne's Ward, Montreal; and privilege to build freight shed and office thereon.
17354	Oct. 12	Bell Telephone Co.	To erect, etc., 7 telephone poles on canal lands at Basin No. 1, Montreal.
17420	Dec. 5	D. G. Loomis & Sons.	To lay, etc., water pipe from canal to Cad. Lot No. 3411, in St. Gabriel Ward, parish of Montreal, and draw water.
17427	" 7	Jno. Y. Reay.	To erect, etc., a boat house on space of 192 sq. ft. of canal property at Lachine, Que.
17434	" 10	Canadian Pacific Railway Co.	Privilege to lay, etc., 2 railway tracks on south side of canal.
1909.			
17475	Jan. 5	Grand Trunk Railway Co.	To lay, etc., a siding on north bank of canal opposite works, property of Dominion Car and Foundry Co.
17483	" 12	Bell Telephone Co.	To lay, etc., electric cables across canal and canal lands at end of Seminary street, Montreal.
17505	Feb. 3	J. B. Bonhomme.	Land on south side of canal, St. Gabriel Ward, Montreal.
17521	" 9	Dominion Wire Mfg Co., Ltd.	Land on north side of canal, in parish of Lachine, and privilege to maintain coal hoist with two travellers for discharging coal from steamers and to erect shed for storage of goods.
17529	" 12	Odilon Belanger.	Land on south side of canal at Lachine, Que.
17533	" 11	P. Vincent Lumber Company, Ltd.	Storage Lots 8 and 9 between St. Gabriel Basins Nos. 3 and 4, Ste. Anne's Ward, Montreal.

SESSIONAL PAPER No. 20

and Canals during the Fiscal Year ended March 31, 1909, &c.—*Continued.*CANAL—*Continued.*

Area.	Amount of Water Power.	Term.	Commence- ment of Term.	TERMS OF PAYMENT.		
				Annual Rental.	Due each Year.	First Instalment Due.
				\$ cts.		
520 sq. ft....		During pleasure	Mar. 18, 1908.	120 00	Mar. 18	Mar. 18, 1908
.....		"	May 1, 1908.	1,350 00	May 1	May 1, 1908
11,607 sq. ft....		"	Jan. 8, 1908.	350 00	Jan. 8	Jan. 8, 1908
18,400 sq. ft....		"	May 1, 1908.	294 40	May 1	May 1, 1908
2,278 sq. ft. }		"	Mar. 18, 1908.	2,145 00	Mar. 18	Mar. 18, 1908
59,000 sq. ft. }		"	May 1, 1908.	120 00	May 1	May 1, 1908
3,000 sq. ft....		"	Aug. 1, 1908.	1 00	Aug. 1	Aug. 1, 1908
675 sq. ft....		"	May 1, 1908.	27 00	May 1	May 1, 1908
300 sq. ft....		"	" 1, 1908.	12 00	" 1	" 1, 1908
2,000 sq. ft....		"	July 1, 1908.	80 00	July 1	July 1, 1908
.....		"	" 1, 1908.	95 00	" 1	" 1, 1908
4,440 sq. ft....		"	Sept. 1, 1908.	177 00	Sept. 1	Sept. 1, 1908
.....		"	" 1, 1908.	235 00	" 1	" 1, 1908
325 sq. ft....		"	May 1, 1908.	21 00	May 1	May 1, 1908
10,500 sq. ft....		"	Sept. 1, 1908.	315 00	Sept. 1	Sept. 1, 1908
2,900 sq. ft....		"	July 1, 1908.	118 40	July 1	July 1, 1908
6,300 sq. ft....		"	Sept. 1, 1908.	252 00	Sept. 1	Sept. 1, 1908
6,000 sq. ft....		"	Aug. 1, 1908.	240 00	Aug. 1	Aug. 1, 1908
14,500 sq. ft....		"	Feb. 1, 1908.	338 33	Feb. 1	Feb. 1, 1908
16,250 sq. ft....		"	Jan. 1, 1908.	\$3 5, 1st 5 years; 650, 2nd 5 years.	Jan. 1	Jan. 1, 1908
1,750 sq. ft....		"	May 1, 1908.	120 00	May 1	May 1, 1908
16,000 sq. ft....		"	Sept. 1, 1908.	192 00	Sept. 1	Sept. 1, 1908
1,500 sq. ft....		"	" 1, 1908.	60 00	" 1	" 1, 1908
3,437 sq. ft....		"	" 1, 1908.	13 75	" 1	" 1, 1908
1,500 sq. ft....		"	May 1, 1908.	60 00	May 1	May 1, 1908
.....		"	Nov. 15, 1908.	7 00	Nov. 15	Nov. 15, 1908
.....		"	Oct. 1, 1908.	30 00	Oct. 1	Oct. 1, 1908
192 sq. ft....		"	Nov. 1, 1908.	5 00	Nov. 1	Nov. 1, 1908
.....		16 yrs. & 6 mos.	May 1, 1908.	350 00	May 1	May 1, 1908
.....		During pleasure	Nov. 1, 1908.	150 00	Nov. 1	Nov. 1, 1908
.....		"	Mar. 18, 1908.	40 00	Mar. 18	Mar. 18, 1908
9,650 sq. ft....		"	Jan. 1, 1909.	144 40	Jan. 1	Jan. 1, 1909
16,331 sq. ft....		"	" 1, 1909.	98 00	" 1	" 1, 1909
3,000 sq. ft....		"	Feb. 1, 1909.	30 00	Feb. 1	Feb. 1, 1909
23,214 sq. ft....		"	May 1, 1909.	700 00	May 1	May 1, 1909

9-10 EDWARD VII., A. 1910

WATER POWER and other Public Property leased by the Department of Railways

LACHINE

No. of Lease.	Date of Signature.	Lessee.	Lands or Rights demised.
	1909.		
17542	Mar. 2.	Canadian Linseed Oil Mills, Ltd....	To erect, etc., on wharf to be built on south side of canal at Côte St. Paul, elevator appliances and overhead carrier, with privilege to use wharf....
17570	" 4.	Montreal Street Railway Co.....	To lay, etc., single track of steel railway upon and across Seigneurs street bridge.....
17630	" 25.	Parish Priest, parish of Holy Angels of Lachine, Que.	Land forming part of south bank of old abandoned entrance to canal.....

MURRAY

	1908.		
17305	Oct. 31.	Central Ontario Railway.....	To lay, etc., a spur line siding on canal reserve on north side of canal.....

RIDEAU

	1908.		
17072	Apl. 2.	Margaret E. White (administratrix estate A. C. White).	Part of W. $\frac{1}{2}$ lot No. 27, 1st concession, tp. of Marlborough.....
17108	" 24.	The Ottawa Gas Company.....	To lay, etc., 12-inch gas main across canal lands and under canal on north side of Bank street swing bridge.....
17115	" 30.	Ottawa City.....	To lay, etc., 8-inch water main across the canal reserve and under canal on north side of Bank street swing bridge.....
17233	Sept. 15.	J. Ed. DeHertel	Part of lot No. 21, concession 5, tp. of Elmsley, county of Leeds, Ont., at Oliver's ferry
17292	Oct. 13.	Thos. S. Howe.....	Part of lot No. 22, concession "A", tp. of Nepean, county of Carleton, at Black Rapids lock station.
	1909.		
17459	Jan. 7.	Felix Keenan.....	Land at Kingston Mills lock station, parts of lots 35 and 36, tp. of Kingston, county of Frontenac, Ont.
17499	" 1.	City of Ottawa.....	To lay, etc., 8-inch water main from Mutchmor street to Clegg street, and 12-inch water main from main street to Robert street.....
17541	Mar. 9.	City of Ottawa.....	To lay, etc., 8-inch water main on line of Bronson street.

SAULT STE.

	1908.		
17210	July 25.	Bell Telephone Co.....	The right and privilege to lay, etc., cables across canal at railway bridge.....
	1909.		
17001	Mar. 1.	Canadian Pacific Railway Co.....	Privilege to lay, etc., telegraph line across lands and under canal from north side of canal to C.P.Ry. bridge.

TRENT

	1908.		
17081	Apl. 10.	P. P. Young.....	Privilege to erect and maintain an electric light line across canal lands and canal at Youngs Point, Ont.
17102	" 22.	G.N.W. Telegraph Co. of Canada	Privilege to erect, etc., telegraph lines across canal lands and over canal at Hastings, Nassau, Peterborough, Bobcaygeon and Fenelon Falls.....
17112	" 24.	Otonabee Power Co., Ltd.....	Privilege to erect and maintain 2 power transmission lines across canal at dam No. 5, and at Nassau.

SESSIONAL PAPER No. 20

and Canals during the Fiscal Year ended March 31, 1909, &c.—*Continued.*CANAL—*Continued.*

Area.	Amount of Water Power.	Term.	Commence- ment of Term.	TERMS OF PAYMENT.		
				Annual Rental.	Due each Year.	First Instalment Due.
				\$	cts.	
.....		During pleasure..	.....	10 00	.....	**
.....		" ..	Nov. 1, 1899.	1 00	Nov. 1	Nov. 1, 1899
11,110 sq. ft....		21 yrs., renewable.	May 1, 1908.	5 00	May 1	May 1, 1908

CANAL.

.....		During pleasure..	Oct. 1, 1908	1 00	Oct. 1	Oct. 1, 1908
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CANAL.

7.00 ac.....		During pleasure..	Apl. 1, 1908.	Right of way....		
.....		" ..	" 1, 1908.	1 00	Apl. 1	Apl. 1, 1908
.....		" ..	" 1, 1908.	1 00	" 1	" 1, 1908
0.76 ac.....		" ..	Aug. 1, 1908.	3 00	Aug. 1	Aug. 1, 1908
½ ac.		" ..	Sept. 1, 1908.	5 00	Sept. 1	Sept. 1, 1908
35 ac.		" ..	Mar. 31, 1908.	15 00	Mar. 31	Mar. 31, 1908
.....		" ..	Jan. 1, 1909.	1 00	Jan. 1	Jan. 1, 1909
.....		" ..	Feb. 1, 1909.	1 00	Feb. 1	Feb. 1, 1909

MARIE CANAL.

.....		During pleasure..	June 1, 1908.	5 00	June 1	June 1, 1908
.....		" ..	Feb. 1, 1908.	5 00	Feb. 1	Feb. 1, 1908

CANAL.

.....		During pleasure..	Apl. 1, 1908.	5 00	Apl. 1	Apl. 1, 1908
.....		" ..	" 1, 1908.	25 00	" 1	" 1, 1908
.....		" ..	" 1, 1908.	10 00	" 1	" 1, 1908

** Date to be fixed upon completion of wharf.

6-10 EDWARD VII., A. 1910

WATER POWER and other Public Property leased by the Department of Railways

TRENT

No. of Lease.	Date of Signature.	Lessee.	Lands or Rights demised.
1908.			
17120	May 1.	G. T. Ry. Company.....	Privilege to erect and maintain telegraph lines across canal lands and over canal at Nassau, Peterborough and Fenelon Falls.....
17121	Apl. 30.	Lakefield Portland Cement Co., Ltd.	Privilege to erect, etc., a power transmission line across canal reserve lands and over canal at Lakefield, Ont.....
17122	May 1.	Bell Telephone Co.....	Privilege to erect, etc., 7 telephone lines across canal lands and over canal at Nassau, Bobcaygeon, etc.
17127	" 1.	North American Telegraph Co., Ltd.	Privilege to erect, etc., telegraph lines across canal lands and over canal at Hastings and Peterborough
17353	Oct. 23.	William Twin	Block "S," Ashburnham, section 2.....
17350	" 30.	Randolph McDonald Co., Ltd	Land in village of Fenelon Falls, county of Victoria, Ont.....

WELLAND

1908.			
17084	Apl. 10	Ontario Power Co. of Niagara Falls	To lay an electric power transmission line near Port Colborne, Ont.....
17146	May 21.	Joseph Battle	Part of lot 6, tp. of Thorold, county of Welland, Ont.
17155	June 1.	Coniagas Reduction Co.....	Privilege to lay and maintain a 4-inch pipe from canal at Thorold, Ont., and to draw water.....
17178	" 23.	E. D. Thomas.....	Part lot 186, tp. of Thorold, county of Welland, Ont.,
17209	July 25	Town of Welland.....	Privilege to lay, etc., 2 sewer pipes on canal lands in town of Welland.....
17288	Sept. 12	Ontario Power Co. of Niagara Falls.	To place, etc., an electric power transmission line across Welland River at Montrose.....
17271	" 9	Plymouth Cordage Co.....	Pt. lot 26, tp. Crowland, County of Welland, Ont ..
17298	Oct. 5	Wm. G. Somerville.....	Part lot 26, concession 5, tp. of Crowland, county of Welland, Ont.....
17325	" 17.	Canadian Portland Cement Co., Ltd.	Privilege to remove waste clay from canal basin.....
17338	" 20	Henry B. Eshelman.....	Privilege to lay and maintain a 12-inch intake pipe and a 12-inch discharge pipe from canal to a pulp mill near south boundary limits of town of Thorold Ont., and to draw water.....
17385	Nov. 18.	Robert Cooper.....	Parts lots 25 and 26, tp. of Crowland, county of Welland, Ont.....
17429	Dec. 12	Canada Southern Railway Co.....	Privilege to lay, etc., a 6-inch drain across canal reserve at Welland, Ont.....
1909.			
17457	Jan. 4.	Village of Merritton....	Land on west side of old canal near lock 15, in village of Merritton, Ont.....
1908.			
17458	Dec. 29	Town of Welland.....	Privilege to lay, etc., 6" water main under canal raceway in town of Welland, Ont.....
1909.			
17500	Jan. 23.	Bell Telephone Co.....	Privilege to erect, etc., telephone line along canal feeder, and a cable across canal near Marshville, Ont.....

SESSIONAL PAPER No. 20

and Canals during the Fiscal Year ended March 31, 1909, &c.—*Concluded.*CANAL—*Continued.*

Area.	Amount of Water Power.	Term.	Commence- ment of Term.	TERMS OF PAYMENT.		
				Annual Rental.	Due each Year.	First Instalment Due.
				\$ cts.		
.....		During pleasure..	Apl. 1, 1908.	15 00	Apl. 1.	Apl. 1, 1908
.....		" ..	" 1, 1908.	5 00	" 1.	" 1, 1908
.....		" ..	" 1, 1908.	35 00	" 1.	" 1, 1908
.....		" ..	" 1, 1908.	10 00	" 1.	" 1, 1908
0.05 ac.....		" ..	Oct. 1, 1908.	1 00	Oct. 1.	Oct. 1, 1908
0.12 ac.....		" ..	June 1, 1908.	10 00	June 1.	June 1, 1908

CANAL.

.....		During pleasure..	Apl. 1, 1908.	5 00	Apl. 1.	Apl. 1, 1908
6.83 ac.....		" ..	" 1, 1908.	10 00	" 1.	" 1, 1908
.....		" ..	May 1, 1908.	15 00	May 1.	May 1, 1908
20.98. ac.....		" ..	June 1, 1908.	21 00	June 1.	June 1, 1908
.....		" ..	July 1, 1908.	5 00	July 1.	July 1, 1908
.....		" ..	Aug. 1, 1908.	1 00	Aug. 1.	Aug. 1, 1908
1.93 ac.....		" ..	June 1, 1908.	50 00	June 1.	June 1, 1908
0.365 ac.....		" ..	Sept. 1, 1908.	10 00	Sept. 1.	Sept. 1, 1908
.....		21 years.....	Oct. 1, 1908.	5 00	Oct. 1.	Oct. 1, 1908
.....		During pleasure..	" 1, 1908.	25 00	" 1.	" 1, 1908
0.18 ac.....		" ..	Sept. 1, 1908.	10 00	Sept. 1.	Sept. 1, 1908
.....		" ..	Oct. 1, 1908.	1 00	Oct. 1.	Oct. 1, 1908
0.02 ac.....		" ..	Dec. 1, 1908.	1 00	Dec. 1.	Dec. 1, 1908
.....		" ..	Sept. 1, 1908.	1 00	Sept. 1.	Sept. 1, 1908
.....		" ..	Dec. 1, 1908.	10 00	Dec. 1.	Dec. 1, 1908

PROPERTY leased to the Department of Railways and Canals by
INTERCOLONIAL

No. of Lease.	Date of Signature.	Lessor.	Lands or Rights demised.
	1908.		
17105	Apl. 22	Mary E. McManus.....	Premises Nos. 131 and 133, east side Hollis street, Halifax, N.S.....
17215	July 25	G. T. Ry. Co.....	Office fronting on Dufort street, Quebec.....
	1909.		
17615	Mar. 27	"	Space on west side ground floor old post office building, corner St. Francois Xavier and St. James streets, Montreal, Que.....

LACHINE

	1908.		
17139	Apl. 30	Joseph McLaughlin.....	Double tenement house at corner of Girouard Road and St. Lawrence street, Lachine, Que.....

TRENT

	1908.		
17109	Apl. 20	Mossom Boyd.....	For use as roadway of part of lot 12, concession 19, township of Harvey, county of Victoria, Ont.....

SESSIONAL PAPER No. 20

various parties during the Fiscal Year ended March 31, 1909.

RAILWAY.

Area.	Term.	Commence- ment of Term.	TERMS OF PAYMENT.		
			Annual Rental.	Due each year.	First Instalment due.
			\$ cts.		
.....	During pleasure	May 1, 1908.	2,000 00	Quarterly..	May 1, 1908
.....	3 years.....	" 1, 1908.	950 00	" "	" 1, 1908
.....	4 years, 4 months.....	Jan. 1, 1909.	3,000 00	Monthly...	Jan. 1, 1909

CANAL.

.....	5 years.....	May 1, 1908.	420 00	Monthly...	May 1, 1908
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CANAL.

.....	Until completion of Bobcaygeon dam.		\$50 for full term.		
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H. F. ALWARD,
Departmental Solicitor.

9-10 EDWARD VII., A. 1910

PROPERTY CONVEYED to the Department of Railways and Canals and

CANADIAN PACIFIC

No. of Deed.	Date of Deed.	Grantor.	Lot.
	1908.		
17716	Nov. 20	His Majesty to C.P.Ry.....	Railway and right of way extending from Eastern Boundary of Manitoba to Eastern Boundary Township 11, Range 12, E. of Principal Meridian.....

INTERCOLONIAL

	1908.		
17187	May 26.	Wm. Humphrey <i>et ux.</i>	Land at.....
17194	" 2.	Geo. Lawrence <i>et ux.</i>	"
17196	Apl. 14.	James Adams <i>et ux.</i>	Land near Kempt Road.....
17247	" 27.	Norman Logan <i>et ux.</i>	Land at.....
17248	June 30.	Roman Catholic Corporation of Antigonish.....	"
17249	July 15.	John V. Shonsmon.....	"
17275	" 30.	George McDonald <i>et ux.</i>	"
17293	May 12.	Wm. J. Dowell <i>et ux.</i>	Land on E. side of Kempt Road.....
17294	July 17.	Jno. M. Brown <i>et ux.</i>	Land at.....
17301	June 12.	John Frazer.....	"
17357	July 14.	J. R. McLeod <i>et ux.</i>	"
17358	Aug. 24.	R. Allison Trites <i>et al.</i>	"
17367	" 13.	Mary E. McDonald.....	"
17372	May 23.	Mary M. Platt <i>et al.</i>	"
*17376	Feb. 28.	Gurney R. Jones.....	Land near Moncton.....
17378	July 8.	Benjamin Hartlin <i>et ux.</i>	Land on West side of Halifax Harbour at the Narrows..
*17389	Feb. 12.	Gilbert L. McCully.....	Right to dig, excavate and remove all the soil on Portage Ballast Pit.....
17390	Aug. 3.	Roch and Jos. Cardin.....	Lot 56 on N.E. side of Lindsay St. South Ward.....
17397	Nov. 6.	Department Agriculture.....	O. C. 9 ac. land acquired from Jas. H. Austin by deed of June 23, 1885
17403	Apl. 15.	Harris G. Hazen.....	Land at.....
17404	June 17.	Chas. Savage.....	"
17411	Aug. 25.	Lucy D. and Cecil W. McManus.	"
17431	" 27.	Rufus H. Margeson <i>et al.</i> , Trustee—Will Alex. Phillips.....	Land on E. side Halifax Harbour.....
17486	" 21.	Hazen Goodwin <i>et al.</i>	Land at.....
17514	Dec. 18.	Margaret Lutes.....	"
17545	Nov. 25.	Chas. McPhee <i>et ux.</i>	"
17546	" 30.	D. Stanley Bould.....	"
17547	" 25.	Warren Cole <i>et ux.</i>	Land 2½ miles west of.....
17548	Aug. 31.	Samuel Freeze <i>et ux.</i>	"
17575	Oct. 20.	Eliza A. Corbin <i>et al.</i>	"
17618	Mar. 3.	Elie D'Amours <i>et al.</i>	Right of way re water pipe line through lots 472 and 473.
17619	" 3.	Alexis Rioux.....	Right of way re water pipe line through lot 92
17620	" 3.	J. H. Roussseau.....	Right of way re water pipe line through lots 95, 116 and 111
	1907.		
*17621	July 4.	Heirs Chas. E. Panet.....	Pt. Cad. Lot 586 Parish of.....
17643	Nov. 5.	Jno. McLaggan (executor estate of John McLaggan).....	Land 5½ miles east of Boiestown.....
	1909.		
17626	Feb. 8.	John McAleese <i>et ux.</i>	Land near.....
17627	Dec. 23.	Wm. P. Davidson <i>et ux.</i>	"

*Too late for last year's report.

SESSIONAL PAPER No. 20

Letters Patent granted during the Fiscal Year ended March 31, 1909.

RAILWAY.

District.	County.	Area.	Amount.	Remarks.
			\$ cts.	
				Letters Patent.

RAILWAY.

Humphreys.....	Westmoreland, N.B.....	0.38 ac.....	100 00	
Sackville.....	".....	0.09 ac.....	75 00	
Halifax, N.S.....	Halifax, N.S.....	0.72 ac.....	313 63	
Millford.....	Hants, N.S.....	0.27 ac.....		
		0.23 ac.....	100 00	
Iona.....	Victoria, N.S.....	0.287 ac.....	250 00	
Kinsack.....	Halifax, N.S.....	0.57 ac.....	85 50	
Glengarry.....	Pictou, N.S.....	8,127 sq. ft.....	10 00	
Halifax.....	Halifax, N.S.....	6,300 sq. ft.....	200 00	
Moncton.....	Westmoreland, N.B.....	3,528 sq. ft.....	2,000 00	
Glengarry.....	Pictou, N.S.....	6,300 sq. ft.....	20 00	
Truro.....	Colchester, N.S.....	2.03 ac.....	2,714 00	
Moncton.....	Westmoreland, N.B.....	7.25 ac.....	1,037 81	
Estmere.....	Victoria, N.S.....	0.23 ac.....	30 00	
Enfield Station.....	Hants, N.S.....	0.533 ac.....	1,000 00	
Sunnybrae.....	Westmoreland, N.B.....	2.3 ac.....	798 10	
Halifax.....	Halifax, N.S.....	1.34 ac.....	2,000 00	
King's, N.B.....	King's, N.B.....	2.57 ac.....	514 00	
Drummondville.....	Arthabaska, P.Q.....	1.62 ac.....	100 00	
Tuft's Cove, N.S.....	".....	9.00 ac.....		O. C.
Amherst.....	Cumberland, N.S.....	2,683 sq. ft.....	2,000 00	
		4,058 sq. ft.....	3,500 00	
Moncton.....	Westmoreland, N.B.....	16,281 sq. ft.....	500 00	
Halifax.....	Halifax, N.S.....	0.273 ac.....	179 37	With interest at 6% from Aug. 10, 1883 to July 1, 1905, and interest at 4% from July 1, 1905 to Aug. 27, 1908.
Ft. Lawrence.....	Cumberland, N.S.....	0.77 ac.....	100 00	
Painsee Jet.....	Westmoreland, N.B.....	2,178 sq. ft.....	25 00	
North Sydney.....	Cape Breton, N.S.....	7,808 sq. ft.....	462 85	
Bedford.....	Halifax, N.S.....	0.108 ac.....	323 00	
Sackville.....	Westmoreland.....	2 ac.....	150 00	
Doaktown.....	Northumberland.....	0.6 ac.....	50 00	
Bedford.....	Halifax, N.S.....	0.32 ac.....	432 00	
Trois Pistoles.....	Temiscouata, Que.....	1,300' x 150'.....	200 00	
".....	".....	".....	25 00	
".....	".....	".....	1 00	
Rivière Ouelle.....	Kamouraska, Que.....	2.53 ac.....	65 00	
White Rapid Brook.....	".....	1.00 ac.....	30 00	
Humphrey's Mill Pond.....	Westmoreland.....	0.681 ac.....	100 00	
Upper Blackville.....	Northumberland, N.B.....	1.10 ac.....	55 00	

9-10 EDWARD VII., A. 1910

PROPERTY CONVEYED to the Department of Railways and Canals and Letters

INTERCOLONIAL

No. of	Date of	Grantor.	Lot.
1908.			
17628	Feb. 8	T. Lemuel Powell <i>et ux.</i>	Land near.....
17 37	Jan. 29	Sarah Bastien.....	".....
17638	Oct. 1	Herbert A. Estey <i>et ux.</i>	".....
17639	Dec. 18	Ora P. King <i>et ux.</i>	".....
17640	Aug. 29	Alex. McMillan <i>et ux.</i>	".....
*17641	Jan. 17	Fred. A. Duffy.....	Land one mile East of.....
1909.			
*17645	Oct. 20	Jos. T. Bertrand.....	Parts of Lots 81 and 93.....
1909.			
17648	Feb. 8	Ed. Carey <i>et ux.</i>	Land at.....
17652	July 20	Geo. Morin.....	Water rights pt. Lot 403.....
17682	Apr. 11	Thos. S. Donaldson.....	Land and land covered with water.....
17735	Jan. 4	John A. Munro.....	".....
1883.			
*17773	June 4	William Rhodes.....	".....

MURRAY

1909.			
17750	Jan. 13	Mary Jane Buchanan <i>et al.</i>	N.E. part of W. $\frac{1}{2}$ lot 6.....

TRENT

1908.			
17141	May 8	Ontario Government.....	Pt. Lot 22, 9th Con. Tp. Methuen, Co. of Peterboro, Ont.
17142	" 6	Milo A. Hawley <i>et ux.</i>	Pt. Lot 12, 7th Con....
17159	Apr. 27	Wm. H. Cluxton <i>et ux.</i>	Of right, etc., to all soil, etc., upon 3'02 ac. pt. Lot 12, Con. 19.....
171 0	May 6	David Johnston <i>et ux.</i>	Pt. Lot 13 and pt. Lot 12, Con. 7.....
17172	" 6	Wm. H. Scott <i>et ux.</i>	Lot 13, Con. 7.....
17173	" 30	Michael O'Donaghue <i>et ux.</i>	Lot 14, Con. 7.....
17174	" 28	Sarah A. Hubble.....	Lot 14, Con. 7.....
17220	July 3	Abraham S. Free <i>et ux.</i>	Pt. Lot 13, Con. 7.....
17250	Aug. 7	Ernest Denmark <i>et ux.</i>	Pt. Lot 14, Con. 9.....
17277	July 4	Dugald Campbell.....	Pt. Lot 11, Con. 8, pt. 17, Con. 7.....
17316	Sept. 18	Ontario Government.....	Pt. Lots 112 and 113, 1st Con. W. of Yong St. Tp. of Gwillimbury, Co. of York, Ont.....
17379	" 14	Alex. Innis <i>et ux.</i>	Pt. Lot 15, Con. 7.....
17472	Nov. 18	The Frankford Cheese and Butter Mfg. Ass'n.	Lot 9, N. side Bridge St., Village of Frankford.....
17549	Dec. 29	Wm. McFarlane <i>et ux.</i>	Pts. Lot 37, Con. 13.....
1909.			
17752	Mar. 29	Samuel Doupe <i>et ux.</i>	Pts. Lot 6, Con. 14.....

*Too late for last year's report.

SESSIONAL PAPER No. 20

Patent issued during the Fiscal Year ended March 31, 1909.—*Concluded.*RAILWAY—*Continued.*

District.	County.	Area.	Amount.	Remarks.
			\$ cts.	
Painsee Jet.....	Westmoreland, N.B.....	15,224 sq. ft.....	35 00	
".....	".....	1,452 sq. ft.....	25 00	
Durham Bridge.....	York, N.B.....	1 ac.....	75 00	
Sussex.....	King's, N.B.....	0.058 ac. }.....	400 00	
		0.294 ac. }.....	400 00	
Boiestown.....	Northumberland, N.B.....	4,300 sq. ft.....	400 00	
".....	".....	12 ac.....	1,200 00	
Rivière Ouelle.....	Kamouraska, Que.....	0.54 ac.....	1,000 00	
Painsee Jet.....	Westmoreland, N.B.....	21,780 sq. ft.....	50 00	
St. Roch des Aulnaies.....	L'Islet, Que.....		300 00	
Birch Cove.....	Halifax, N.S.....	1.15 ac. }.....	4,133 87	
		2.95 ac. }.....		
Zionville.....	York, N.B.....	0.64 ac. }.....	125 00	
		0.29 ac. }.....		
Lévis.....	Levis, Que.....	23,050 sq. ft }.....	11,770 00	
		6,375 sq. ft }.....		

CANAL.

Murray.....	Northumberland, Ont.....	0.41 ac.....	105 00	
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CANAL.

Methuen.....	Peterboro, Ont.....	21.00 ac.....		O. C.
Seymour.....	Northumberland, Ont.....	6.00 ac.....	500 00	
Harvey.....	Victoria, Ont.....	3.02 ac.....	600 00	
Seymour.....	Northumberland, Ont.....	8.08 ac.....	821 66	
".....	".....	3.75 ac.....	1,000 00	
".....	".....	2.37 ac.....	159 25	
".....	".....	4½ ac.....	130 00	
".....	".....	5.60 ac.....	205 00	
".....	".....	0.70 ac.....	50 00	
".....	".....	1.45 ac.....	350 00	
East Gwillimbury.....	York, Ont.....	6.50 ac. }.....		
		13.34 ac. }.....		O. C.
Seymour.....	Northumberland, Ont.....	1.1 ac.....	75 00	
Sydney.....	Hastings, Ont.....		4,000 00	
Smith.....	Peterborough, Ont.....	0.07 ac. }.....		
		0.05 ac. }.....	200 00	
Seymour.....	Northumberland, Ont.....	1.05 ac.....	600 00	

H. F. ALWARD,

Departmental Solicitor.

9-10 EDWARD VII., A. 1910

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*

CANADIAN PACIFIC RAILWAY.

No. of Re-lease.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17375	Sept. 4.	The Royal Trust Company of Canada (Executor of Late Frank Buller).	In full discharge of all claims in respect of 1.2 ac. of land being parts of lots 38, 39, 40, 41, 42, 43, 44, 45, 46, 61, 62, 63, 64 and 65 of Block "E" according to subdivision of W. ½ of E. ½ of lot 190, Group 1, New Westminster, B.C.	977 37
17717	Nov. 20.	The Canadian Pacific Railway Co.	For all obligations and covenants expressed in Letters Patent No. 17716 of railway and right of way from E. boundary of Manitoba to E. boundary of township 11, range 12, E. of principal meridian.	

INTERCOLONIAL RAILWAY.

	1908.			
17169	June 6.	Alfred J. Witzell.....	Damages for injuries sustained through an accident at or near Beaver Brook.	250 00
17244	Sept. 4.	Angus W. McGillivray....	Damages for injuries sustained while in the employ of the I. C. Ry. at Williams Point, N.S.	1,000 00
*17366	Feb. 28.	Gurney R. Jones.....	Damages to 3 acres of marshland in consequence of the widening of the I. C. Ry. between Moncton and Painsec.	100 00

PRINCE EDWARD ISLAND RAILWAY.

	1908.			
17288	Aug. 6.	William Nelson.....	Damages for injuries sustained through an accident at or near Charlottetown.	175 00

CHAMBLY CANAL.

	1908.			
17671	Dec. 10	Daniel Mullarkey.....	Damages by water to lots 338 and 345, Parish of St. Joseph de Chambly, Co. of Chambly, Que.	350 00

LACHINE CANAL.

	1908.			
17243	Aug. 24	Joseph Richer.....	Damages for the loss of a horse drowned in canal from Côte St. Paul Bridge.	225 00

SESSIONAL PAPER No. 20

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*

SOULANGES CANAL.

No. of Release.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17156	Apl. 15	Marie Joseph Lacombe (widow T. Delage).	Damages by soakage and flooding to lot 1, Parish of St. Ignace of Coteau du Lac and to lot 1, Parish of St. Joseph de Soulanges, County of Soulanges, Que.	400 00
17181	June 23	Roch Bradley <i>et ux.</i>	Damages for injuries sustained by Mrs. Catharine Bradley in an accident at third swing bridge of canal.	100 00
17300	Sept. 10	Jos. C. De Montigny	Damages by flooding to lot No. 448, Parish of St. Joseph de Soulanges, County of Soulanges, Que.	600 00

TRENT CANAL.

	1908.			
17307	Sept. 28	James Tighe <i>et ux.</i>	Damages to lot 13, W. of concession Street, Peterborough, consequent upon construction of canal.	225 00
17315	" 25	Wm. Smithson <i>et ux.</i>	Damages to lot 8, concession 4, tp. of South Monaghan, County of Northumberland, Ont., consequent upon the construction of the canal.	700 00
17320	" 19	William McAllister <i>et ux.</i>	Damages to lot 12, concession 4, tp. of South Monaghan, County of Northumberland, Ont., consequent upon the construction of the canal.	1,200 00
17321	" 15	Corporation, Township of Verulam.	Damages to roads running across Emily Creek, and to Flat Lands, owing to the construction of the Trent Canal.	2,000 00
17322	" 23	Ed. E. Anderson <i>et al.</i>	Damages to lot No. 2, concession 2, township of South Monaghan, County of Northumberland, consequent upon construction of canal.	500 00
17323	" 23	John Sawers <i>et ux.</i>	Damages to lot No. 1, Island No. 21, in Stoney Lake, township of Dummer, County of Peterborough, Ont., consequent upon the construction of the canal.	200 00
17324	" 26	William Eyres <i>et al.</i>	Damages to parts of lot 5 and 7 and to part of lot 6, in the 4th concession of the township of South Monaghan, county of Northumberland, consequent upon the construction of the canal.	1,400 00
17331	Oct. 10	John Buckham <i>et ux.</i>	Damages by water to lot 17, concession 4, township of South Monaghan, consequent upon the construction of the canal.	725 00
17380	" 31	John Rutherford	Damages to lot 4, concession 3, township of South Monaghan, county of Northumberland, Ont.	300 00
17405	Nov. 12	Andrew G. Huggins <i>et ux.</i>	Damages by water to lot 9, concession 4, township of South Monaghan, county of Northumberland, Ont., consequent upon the construction of the canal.	930 00
17403	" 16	Patrick Flaherty <i>et ux.</i>	Damages by water to E. $\frac{1}{2}$ of S.E. $\frac{1}{4}$ of lot 22, concession 10, township of South Emily, county of Victoria, consequent upon the construction of the canal.	75 00
17432	" 23	Walter Finnie <i>et ux.</i>	Damages to lot 17, concession 1, township of South Monaghan, county of Northumberland, Ont., consequent upon the construction of the canal.	300 00
17437	" 28	James S. Pengelly <i>et al.</i>	Damages by water to parts of lot 6 and 7, concession "A" broken front, township of South Monaghan, county of Northumberland, Ont.	250 00
17438	" 24	Joseph Byers <i>et al.</i>	Damages by water to lot 10, concession "A" township of South Monaghan, county of Northumberland, Ont.	350 00
17439	" 25	Pierre Powers <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 11, concession 4, township of South Monaghan, county of Northumberland, Ont.	300 00
17440	" 23	Thomas H. Perrin <i>et al.</i>	Damages by water to westerly part lot 11, concession "A", township of South Monaghan, county of Northumberland, Ont.	125 00
17441	" 14	John Bradshaw	Damages by water to lot 14, concession 4 and to lot 14, concession 5, township of South Monaghan, county of Northumberland, Ont.	135 00
17450	" 5	Robert Fisher <i>et al.</i>	Damages to lots 13 and 14, concession "A", township of South Monaghan, county of Northumberland, Ont.	700 00
17451	Oct. 24	Alexander Anderson, Jr. <i>et al.</i>	Damages to North half lot 1, concession 2, South Monaghan, county of Northumberland, Ont.	500 00

9-10 EDWARD VII., A. 1910

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*

TRENT CANAL—*Continued.*

No. of Re-lease.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17465	Oct. 10.	Ed. H. D. Hall.....	Damages by water to Island No. 15, township of Dummer, county of Peterborough, Ont.	200 00
17466	Nov. 28.	Ann and Robert Donoghue.	Damages by water to lot 23, concession 11, township of Emily, county of Victoria, Ont.	200 00
17467	Dec. 28.	Dennis J. Doran.....	Damages by water to S.E. $\frac{1}{4}$ of lot 9, concession 8, township of Ennismore, county of Peterborough, Ont.	60 00
17468	Nov. 16	Wm. Bradshaw, <i>et ux.</i>	Damages by water to lot 5, concession 3, township of South Monaghan, county of Northumberland, Ont.	700 00
17469	Dec. 3	Wm. J. Cavanagh.....	Damages by water to N. $\frac{1}{2}$ and part of lot No. 3, concession 9, township of Ennismore, county of Peterborough, Ont.	150 00
17470	" 3	Martin J. Devine <i>et al.</i>	Damages by water to South half of lot 21, concession 13, township of Emily, county of Victoria, Ont.	75 00
17471	Nov. 28.	Wm. Buckham.....	Damages by water to lot 18, concession 4, township of South Monaghan, county of Northumberland, Ont.	550 00
17473	Oct. 21	Jno. Cannon <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 7, concession 10, township of Ennismore, county of Peterborough, Ont.	300 00
17487	Dec. 12	Jas. Gifford <i>et al.</i>	Damages by water to lots 6 and 7 in concession 2; and N. $\frac{1}{2}$ of N. $\frac{1}{2}$ of lot 6, in the concession 9, township of Ennismore, county of Peterborough, Ont.	795 00
17488	Oct. 13	Cornelius O'Reilly.....	Damages by water to lot 9, concession 9, and N. $\frac{1}{2}$ of lot 12, concession 7, township of Ennismore, county of Peterborough, Ont.	500 00
17489	Dec. 23.	George C. Franks <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ of lot 22, concession 10, and South $\frac{1}{4}$ lot 22, concession 11, township of Emily, county of Victoria, Ont.	80 00
17490	" 8	J. M. Willan <i>et ux.</i>	Damages by water to lot 4, concession 5, township of South Monaghan, county of Northumberland, Ont.	750 00
17491	" 9	Robert Perdue <i>et ux.</i>	Damages by water to south half of lots 20 and 21, concession 12, and to N. $\frac{1}{2}$ of lot 20, concession 11, township of Emily, County of Victoria, Ont.	1,200 00
17492	Nov. 24.	William H. Bolster.....	Damages by water to N. $\frac{1}{2}$ of lot 23, concession 10, township of Emily, county of Victoria, Ont.	160 00
17493	Oct. 28	Cornelius O'Connor.....	Damages by water to broken lots 9 and 10, concession 10, and S. $\frac{1}{2}$ of lot 8, concession 9, township of Ennismore, county of Peterborough, Ont.	320 00
17494	" 28	Maurice O'Connor.....	Damages to S. $\frac{1}{2}$ of lot 10, concession 8, township of Ennismore, county of Peterborough, Ont.	100 00
	1909.			
17497	Jan. 2	Isaac Elliot <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ of lot 20, concession 11, and to lot 20 and part of lot 21, concession 15, township of Smith, county of Peterborough, Ont.	350 00
	1908.			
17501	Dec. 7	David Morrissey <i>et ux.</i>	Damages by water to South half of lots 17 and 18, concession 10, township of Emily, county of Victoria, Ont.	93 00
17502	Nov. 28	William A. Deyell <i>et al.</i>	Damages by water to E. $\frac{1}{2}$ of lot 12 and W. $\frac{1}{2}$ of lot 13, concession 14, township of Otonabee, county of Peterborough, Ont.	725 00
17503	Dec. 29	William James Rehill <i>et ux.</i>	Damages by water to lot 10, concession 6, township of Emily, county of Victoria, Ont.	320 00
17504	" 7	Dennis Flaherty.....	Damages by water to W. $\frac{1}{2}$ of S.E. $\frac{1}{4}$ of lot 22, concession 10, and N.W. $\frac{1}{4}$ of N.E. $\frac{1}{4}$ of lot 22, concession 9, township of Emily, county of Victoria, Ont.	40 00
17507	Oct. 10	Grace May East.....	Damages by water to Island No. 22A, township of Dummer, county of Peterborough, Ont.	200 00
17508	Nov. 17.	John Seollard <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ and S. $\frac{1}{4}$ of lot 9, and N. $\frac{1}{2}$ of lots 10 and 11, concession 8, township of Ennismore, county of Peterborough, Ont.	1,000 00
17509	Dec. 23.	Fanny A. Killaby.....	Damages by water to lot 4, concession 19, township of Verulam, county of Victoria, Ont.	160 00
17522	" 16.	Isabella W. Davidson <i>et mar</i>	Damages by water to lot 6, concession 9, township of Verulam, county of Victoria, Ont.	200 00

SESSIONAL PAPER No. 20

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*

TRENT CANAL—*Continued.*

No. of Release.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17523	Dec. 23	Wm. Young <i>et ux.</i>	Damages by water to lot 8, concession 8, township of Ennismore, county of Peterborough, Ont.	80 00
17524	" 7	James J. Flaherty, <i>et ux.</i>	Damages by water to S. $\frac{1}{2}$ lot 21 and S.W. $\frac{1}{2}$ lot 22, concession 10, township of Emily, county of Victoria, Ont.	250 00
17525	" 23	William Robinson <i>et al.</i>	Damages by water to E. $\frac{1}{2}$ lot 11, township of South Monaghan, county of Northumberland, Ont.	500 00
17526	" 24	William Tait	Damages by water to S. $\frac{1}{2}$ of lots 1 and 2, concession 2, township of South Monaghan, county of Northumberland, Ont.	150 00
17527	Nov. 30	Leonard McAuliffe <i>et ux.</i>	Damages by water to S.E. $\frac{1}{4}$ lot 14, concession 8 and lot 20, concession 9, township of Emily, county of Victoria, Ont.	100 00
17531	Dec. 12	David H. Quinlan <i>et al.</i>	Damages by water to part of lot 7, concession 3, township of Ennismore, county of Peterborough, Ont.	180 00
17532	" 17	John Sullivan <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ lot 21, concession 12, township of Emily, county of Victoria, Ont.	120 00
17533	" 15	Dennis Begely <i>et al.</i>	Damages by water to E. $\frac{1}{4}$ lot 16, concession 9, and N.W. part of lots 16, concession 8, township of Emily, county of Victoria, Ont.	100 00
	1909.			
17534	Jan. 5	Benjamin Nicholls	Damages by water to lot 2, concession 10, township of Verulam, county of Victoria, Ont.	80 00
	1908.			
17535	Dec. 29	Thomas E. Rice <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ lot 10, concession 6, township of Emily, county of Victoria, Ont.	100 00
	1909.			
17536	Feb. 20	Garthorne J. Jopping <i>et al.</i>	Damages by water to lot 5, concession 2, township of Ennismore, county of Peterborough, Ont.	350 00
	1908.			
17537	Dec. 16	John Duffy <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ lot 20, concession 8, township of Emily, county of Victoria, Ont.	20 00
17538	Oct. 30	John E. O'Donoghue <i>et al.</i>	Damage by water to part of lot 10, concession 4, township of Ennismore, county of Peterborough, Ont.	120 00
17539	Dec. 30	George T. Rickerby	Damages by water to lot 13, concession 12, township Douro, county of Peterborough, Ont.	100 00
	1909.			
17540	Feb. 27	Thomas E. Bradburn	Damages by water to Island 11, township of Dummer, county of Peterborough, Ont.	200 00
17541	" 24	Abner G. Wood <i>et ux.</i>	Damages by water to W. $\frac{1}{2}$ lot 9, and 10 ac. in front of W. $\frac{1}{2}$ of lot 9 and S. $\frac{1}{2}$ lot 8, broken front concession, and 11 ac. in front of said concession, township of South Monaghan, county of Northumberland, Ont.	60 00
17542	Jan. 15	Norman McL. Brecken-bridge.	Damages by water to parts of lots 5 and 6, concession 4, township of South Monaghan, county of Northumberland, Ont.	800 00
17543	" 2	Alexander Gordon	Damages by water to parts of lots 13, 14 and 15, concession 11, township of North Monaghan, county of Peterborough, Ont.	250 00
17544	Feb. 24	David Johnston <i>et al.</i>	Damages by water to part of lot 11, concession 10, township of North Monaghan, county of Northumberland, Ont.	480 00
	1908.			
17572	Oct. 28	Patrick O'Connor	Damages by water to N. $\frac{1}{4}$ of lot 11, concession 7, township of Ennismore, county of Peterborough, Ont.	100 00
17576	Dec. 22	William Dwyer <i>et ux.</i>	Damages by water to lot 11, concession 16, township of Otonabee, county of Peterborough, Ont.	300 00

9-10 EDWARD VII., A. 1910

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*

TRENT CANAL—*Continued.*

No. of Re-lease.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17577	Dec. 12	John Finnie <i>et al.</i>	Damages by water to lot 15, concession "A" except 1 ac. S.W. corner; S. $\frac{1}{2}$ lot 16, concession 1, part lot 17, 5 ac.; and North 33 ac. of lot 16, concession "A", township of South Monaghan, county of Northumberland, Ont.	500 00
	1909.			
17578	Feb. 9	Thompson Huggins <i>et al.</i> ...	Damages by water to parts of lots 5, 6, and 7, concession 4, township of South Monaghan, county of Northumberland, Ont.	100 00
17579	" 2	Thomas Bradshaw <i>et ux.</i> ...	Damages by water to S. $\frac{1}{2}$ lot 5, concession 3, township of South Monaghan, county of Northumberland, Ont.	100 00
	1908.			
17580	Oct. 31.	Robert A. Deyell <i>et al.</i> ...	Damages by water to parts of lots 10 and 11, concession 17, broken lot 12, E. $\frac{1}{2}$ lot 13, part of lot 12, concession 14, township of Otonabee, county of Peterborough, Ont.	1,190 00
	1909.			
17581	Jan. 4.	Henry Mickels <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ lot 9, concession 4, township of South Monaghan, county of Northumberland, Ont.	100 00
	1908.			
17582	Nov. 16.	Patrick Twomey.....	Damages by water to South half of lot 12, concession 7, township of Ennismore, county of Peterborough, Ont.	75 00
17584	Dec. 21.	Henry R. Stewart <i>et ux.</i> ...	Damages by water to lot 17, concession 17, township of Otonabee, county of Peterborough, Ont.	000 00
17585	" 12.	Timothy Crowley.....	Damages by water to E. $\frac{1}{2}$ of lot 19, concession 11, township of Emily, county of Victoria, Ont.	100 00
17586	Nov. 25	Julia Hickson	Damage by water to lots 15 and 16, concession 7, township of Ennismore, county of Peterborough, Ont.	400 00
17587	Dec. 30	Amelia Parsons Hall	For damages by water to lot 8, concession 9, township of Harvey, county of Peterborough, Ont.	400 00
	1909.			
17588	Jan. 28.	Martin J. Doran.....	Damages by water to N. $\frac{1}{2}$ lot 8, concession 9, township of Ennismore, county of Peterborough, Ont.	70 00
	1908.			
17589	Nov. 23.	Margaret O'Donoghue <i>et al.</i>	Damages by water to lots 10 and 11, concession 4, and S. $\frac{1}{2}$ lot 11, concession 5, township of Ennismore, county of Peterborough, Ont.	400 00
17590	" 23.	William F. Traviss <i>et al.</i> ...	Damages by water to S. $\frac{1}{4}$ of lot 23, concession 10, township of Emily, county of Victoria, Ont.	200 00
17591	Dec. 26	George Moncrief <i>et al.</i>	Damages by water to S.E. $\frac{1}{4}$ lot 3 and S.W. $\frac{1}{4}$ lot 4, concession 8, township of N. Monaghan, county of Peterborough, Ont.	400 00
17592	Nov. 28.	William O'Neil <i>et al.</i>	Damages by water to lot 22, concession 13, township of Emily, county of Victoria, Ont.	400 00
17593	Dec. 12	Simon Perdue <i>et ux.</i>	Damages by water to lot 19, concession 10, and S.W. $\frac{1}{4}$ lot 19, concession 11, township of Emily, county of Victoria, Ont.	000 00
	1909.			
17594	Feb. 13	William George Howden <i>et al.</i>	Damages by water to lots 20 and 21, concession 4, township of South Monaghan, county of Northumberland, Ont.	500 00
17595	Feb. 28.	Walter Bradshaw.....	Damages by water to lot 10, concession 4, township of South Monaghan, county of Northumberland, Ont.	1,125 00
17596	Mar. 11	Israel Duncan Church <i>et ux.</i>	Damages by water to lot 4, concession 4, township of Burleigh county of Peterborough, Ont.	200 00
17597	" 1.	John W. Smith <i>et ux.</i>	Damages by water to S. $\frac{1}{4}$ of lot 10, concession 5, township of Emily, county of Peterborough, Ont.	100 00

SESSIONAL PAPER No. 20

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Continued.*TRENT CANAL—*Continued.*

No. of Release.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17598	Mar. 1	George Arthur McQuade <i>et ux.</i>	Damages by water to N. $\frac{1}{2}$ lot 10, concession 5, township of Emily, county of Victoria, Ont.	400 00
17599	" 9	Joseph Stevenson <i>et ux.</i>	Damages by water to lot 3, concession 16, and W. $\frac{1}{2}$ lot 1, concession 15, township of Harvey, county of Peterborough, Ont.	280 00
17603	Feb. 16	Michael O'Carroll <i>et al.</i>	Damages by water to lot 23, concession 5, and N.E. part of lot 23, concession 4, township of Emily, county of Victoria, Ont.	100 00
17604	" 5	James E. Thurston <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 9, concession 19, township of Verulam, county of Victoria, Ont.	144 00
	1908.			
17605	Dec. 15	John N. Telford <i>et ux.</i>	Damages by water to lot 8 and part of lot 7, concession 3, township of Ennismore, county of Peterborough, Ont.	300 00
	1909.			
17606	Feb. 27	Mary E. Kent <i>et al.</i>	Damages by water to E. $\frac{1}{2}$ of lot 12, concession 12, township of Otonabee, county of Peterborough, Ont.	80 00
17607	" 13	George McBrien <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ lot 13, concession 7, township of Emily, county of Victoria, Ont.	100 00
	1908.			
17610	Dec. 12	Patrick Duffy <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ lot 15, concession 8, township of Emily, county of Victoria, Ont.	150 00
	1909.			
17611	Feb. 27	James Laing <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ lot 16, concession 17, township of Otonabee, county of Peterborough, Ont.	144 00
17612	" 17	John Morrissey <i>et al.</i>	Damages by water to N. $\frac{1}{2}$ lots 14 and 15, concession 17, township of Emily, county of Victoria, Ont.	220 00
	1908.			
17613	Dec. 31	James Falls <i>et al.</i>	Damages by water to lot 7 and 8, concession 19, township of Verulam, county of Victoria, Ont.	320 00
17614	Oct. 27	Stephen Harrington	Damages by water to parts of lots 12, 13 and 14, concession 8, township of Ennismore, county of Peterborough, Ont.	300 00
	1909.			
17617	Feb. 27	Thomas H. McQuade <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 11, concession 5, township of Emily, county of Victoria, Ont.	500 00
	1908.			
17622	Oct. 15	Eugene Maloney	Damages by water to lot 14, concession 5, township of Ennismore, county of Peterborough, Ont.	30 00
17629	Nov. 28	Patrick Gilliece <i>et al.</i>	Damages by water to lot 23 and E. $\frac{1}{2}$ and S.W. $\frac{1}{4}$ lot 22, concession 14, township of Emily, county of Victoria, Ont.	600 00
	1908.			
17642	Mar. 20	James Gray <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 8, concession 11, and part of broken lots 7 and 8, township of Otonabee, county of Peterborough, Ont.	500 00
17643	" 31	John Sargent <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lots 3, concession 2, township of Asphodel, county of Peterborough, Ont.	100 00
17644	" 23	John Smyth <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 15, concession 2, and N.W. $\frac{1}{4}$ lot 16, concession 2, township of South Monaghan, county of Northumberland, Ont.	1,500 00
17646	" 13	William McCarroll <i>et al.</i>	Damages by water to lot 22, concession 4, township of Emily, county of Victoria, Ont.	250 00
17647	" 8	Rupert H. Bradburn <i>et ux.</i>	Damages by water to lot 12, concession 15, township of Otonabee, county of Peterborough, Ont.	1,200 00
17651	" 30	James W. Latimer <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 4, concession 6, township of South Monaghan, county of Northumberland, Ont.	100 00
	1908.			
17655	Oct. 28	Richard Killen	Damages by water to N. $\frac{1}{2}$ of lot 13, concession 7, township of Ennismore, county of Peterborough, Ont.	500 00

9-10 EDWARD VII., A. 1910

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909—*Concluded*.

TRENT CANAL—*Continued*.

No. of Release.	Date of Signature.	Grantor.	Description.	Amount.
	1909.			\$ cts.
17655	Mar. 10	James Emberson <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 16, concession 3, township of South Monaghan, county of Northumberland, Ont.	350 00
17657	" 12	Samuel J. Melhain <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 14, concession 7, township of Emily, county of Victoria, Ont.	100 00
17658	" 15	Agnes Collins <i>et al.</i>	Damages by water to lot 11, concession 13, township of Otonabee, county of Peterborough, Ont.	150 00
17659	" 15	Mary Mulcahy <i>et al.</i>	Damages by water to lot 13, concession 5, township of Otonabee, county of Peterborough, Ont.	140 00
17660	" 27	Jesse Simon Thurston.....	Damages by water to N. $\frac{1}{2}$ of lot 9, concession 19, township of Verulam, county of Victoria, Ont.	100 00
17661	" 16	Ann McKinty <i>et al.</i>	Damages by water to lot 2, concession 12, township of Harvey, county of Peterborough, Ont.	180 00
17662	Feb. 16	Robert George Tully.....	Damages by water to N. $\frac{1}{2}$ of lot 23, concession 4, township of Emily, county of Victoria, Ont.	60 00
17663	Mar. 20	William T. Cowling <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 3, concession 6, township of South Monaghan, county of Northumberland, Ont.	50 00
17664	Feb. 15	Spurgeon Cosh <i>et al.</i>	Damages by water to north 50 acres lot 11, concession 19, township of Verulam, county of Victoria, Ont.	100 00
17665	Mar. 6	David Wilson <i>et ux.</i>	Damages by water to S.E. $\frac{1}{4}$ of lot 4, concession 8, township of North Monaghan, county of Peterborough, Ont.	150 00
17666	Mar. 12	James A. Warner <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 6, concession 3, township of Asphodel, county of Peterborough, Ont.	330 00
17667	" 13	James Latimer <i>et al.</i>	Damages by water to lot 5, concession 6, township of South Monaghan, county of Northumberland, Ont.	630 00
17668	" 12	Gordon L. Rusk <i>et ux.</i>	Damages by water to S. $\frac{1}{2}$ of lot 15, concession 7, township of Emily, county of Victoria, Ont.	120 00
17669	" 11	Richard C. Latimer <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 4, concession 6, township of South Monaghan, county of Northumberland, Ont.	120 00
17670	" 10	Charles F. Bent <i>et ux.</i>	Damages by water to N. part of S.E. $\frac{1}{4}$ of lot 11; N.W. $\frac{1}{4}$ of lot 8 and part of S.W. $\frac{1}{4}$ of said lot 8, in concession 4, township of Emily, county of Victoria, Ont.	50 00
	1908.			
17685	Oct. 17	John Young.....	Damages by water to N. $\frac{1}{2}$ lot 7, concession 9, township of Ennismore, county of Peterborough, Ont.	150 00
	1909.			
17721	Feb. 3	Mary Baxter.....	Damages by water to E. $\frac{1}{2}$ lot 3, concession 5, township of South Monaghan, county of Northumberland, Ont.	1,000 00
17723	Jan. 27	Roman Catholic Episcopal Corporation of Diocese of Peterborough, Ont.	Damages by water to part of lot 12, concession 4, township of Ennismore, county of Peterborough, Ont.	40 00
17724	Mar. 13	Alexander Elliott <i>et al.</i>	Damages by water to W. $\frac{1}{2}$ of lot 6, concession 13, township of Harvey, county of Peterborough, Ont.	128 00
	1908.			
17726	Dec. 19	John K. Galvin <i>et ux.</i>	Damages by water to lot 3, concession 10, township of Ennismore, county of Peterborough, Ont.	10 00
	1909.			
17739	Jan. 30	Bernard Flood.....	Damages by water to S. $\frac{1}{2}$ of lot 7, concession 9, township of Ennismore, county of Peterborough, Ont.	150 00
	1908.			
17740	Dec. 11	Thomas Flood.....	Damages by water to part of lot 1, concession 7, township of Ennismore, county of Peterborough, Ont.	75 00
17741	Nov. 6	Patrick Garvey <i>et ux.</i>	Damages by water to S. $\frac{1}{2}$ lot 2, concession 6, township of Ennismore, county of Peterborough, Ont.	300 00
	1909.			
17742	Feb. 2	Michael Crough <i>et al.</i>	Damages by water to S. $\frac{1}{2}$ of lot 13, concession 5, township of Ennismore, county of Peterborough, Ont.	30 00

SESSIONAL PAPER No. 20

DAMAGES released to the Department of Railways and Canals during the Fiscal Year ended March 31, 1909.—*Concluded.*

TRENT CANAL—*Concluded.*

No. of Re-lease.	Date of Signature.	Grantor.	Description.	Amount.
	1908.			\$ cts.
17743	Mar. 12.	Wesley Whitfield.....	Damages by water to lots 5 and 6 concession 7, township of North Monaghan, county of Peterborough, Ont.	425 00
17744	Feb. 2	William B. Crouch <i>et al.</i> ...	Damages by water to lot 13, concession 5, and to part of lot 14, concession 6, township of Ennismore, county of Peterborough, Ont.	40 00
	1908.			
17745	Nov. 19	Michael Gannon.....	Damages by water to lot 8, concession 10, township of Ennismore, county of Peterborough, Ont.	300 00
17747	Oct. 15.	John P. Flood.....	Damages by water to N. $\frac{1}{2}$ lot 2, concession 8, and lot 2, concession 9, township of Ennismore, county of Peterborough, Ont.	250 00
	1909.			
17748	Feb. 4.	George Lockie.....	Damages by water to lot 4, concession 7, township of North Monaghan, county of Peterborough, Ont.	350 00
17749	Jan. 15.	Nelson Sage <i>et ux.</i>	Damages by water to E. $\frac{1}{2}$ and W. $\frac{1}{2}$ of lot 6, concession 8, township of North Monaghan, county of Peterborough, Ont.	215 00
	1908.			
17750	Dec. 21.	James Chambers <i>et al.</i>	Damages by water to parts of lots 20, 21 and 22 in concession 16, township of Otonabee, county of Peterborough, Ont.	217 00
17751	Nov. 21	Peter F. Flood <i>et al.</i>	Damages by water to parts of lots 1 and 2 concession 8, township of Ennismore, county of Peterborough, Ont.	90 00
	1909.			
17753	Feb. 4.	John Throop.....	Damages by water to E. $\frac{1}{2}$ lot 3, concession 11, township of Otonabee, county of Peterborough, Ont.	100 00
	1908.			
17757	Dec. 11	Michael Flood.....	Damages by water to lot 1, concession 8, township of Ennismore, county of Peterborough, Ont.	90 00
17758	" 29	Joshua Chambers.....	Damages by water to lot 9, concession 8, township of North Monaghan, and to parts of lots 19 and 20, concession 15, township of Otonabee, county of Peterborough, Ont.	408 00
17759	" 29	Robert W. Chambers <i>et al.</i> ...	Damages by water to parts of lots 21 and 22, and to lot 23, concession 16, township of Otonabee, county of Peterborough, Ont.	181 00
	1909.			
17767	Mar. 13	M. Fitzpatrick.....	Damages to parts of lots 17 and 18, concession 9, township of Emily, county of Victoria, Ont.	400 00
	1908.			
17768	Nov. 21.	M. Perdue.....	Damages to S. $\frac{1}{2}$ of lot 4, concession 2, township of Ennismore, county of Peterborough, Ont.	400 00
17772	" 28	W. M. Harrington.....	Damages to S. $\frac{1}{2}$ of lot 11, S. $\frac{1}{2}$ of lot 14 and to lot 15, concession 8, township of Ennismore, county of Peterborough, Ont.	225 00

WELLAND CANAL.

	1908.			
17452	Dec. 19	Ed. Kramer.....	Damages consequent upon the loss of a horse.....	130 00

*Too late for last year's report.

H. F. ALWARD,

Departmental Solicitor.

PART III

REPORTS OF GOVERNMENT RAILWAY
OFFICIALS AND OTHERS FOR
THE YEAR 1908-09

1. D. Pottinger, General Manager Government Railways, I.C.R.
W. B. MacKenzie, Chief Engineer, I.C.R.
T. C. Burbee, Engineer of Maintenance, I.C.R.
G. R. Joughins, Superintendent of Motive Power, I. C. R.
S. L. Shannon, Comptroller, I. C. R.
2. D. Pottinger, General Manager Government Railways, Windsor Branch.
T. C. Burbee, Engineer of Maintenance, Windsor Branch.
S. L. Shannon, Comptroller, Windsor Branch.
3. D. Pottinger, General Manager Government Railways, P.E.I. Ry.
W. B. MacKenzie, Chief Engineer, P.E.I. Ry.
G. A. Sharpe, Superintendent, P.E.I. Ry.
W. S. Poole, Mechanical Superintendent, P.E.I. Ry.
W. T. Huggan, Accountant and Auditor, P.E.I. Ry.
4. Chairman and Secretary of Government Railways Provident Fund.

INTERCOLONIAL RAILWAY OF CANADA.

OFFICE OF THE GENERAL MANAGER,

MONCTON, N.B., June 23, 1909.

SIR.—I have the honour to submit the following report on the working of the Intercolonial Railway during the fiscal year ended March 31, 1909.

I inclose the report of the chief engineer on the works charged to capital account; the report of the engineer of maintenance on the repair and renewal of the permanent way, buildings and works; and the reports of the superintendent of motive power and of the mechanical accountant, with the statements relating to the mechanical department; also the following statements of the accounts of the railway prepared by the comptroller :—

1. Capital account.
2. Revenue.
3. Maintenance of way and structures.
4. Maintenance of equipment.
5. Traffic expenses.
6. Transportation expenses.
7. General expenses.
8. General stores.
9. General balance.
10. Statement of averages.

The length of railway in operation during the year was the same as last year. During the year the railway was remeasured and the length was found to be 1,447.13 miles instead of 1,448.62 miles as in last year's report. The corrected mileage of 1,447.13 miles has been adopted in this report.

CAPITAL ACCOUNT.

The cost of road and equipment on March 31, 1908, was, \$57,127,431 90
The additions during the year were as follows :—

Amherst—improvements.	27,211 01
Antigonish—increased accommodation.	4,500 00
Aston Junction—to provide 100-ton track scale.	2,215 02
Avondale—subway.	6,778 67
Campbellton—improvements.	18,819 97
Chatham—diversion of line and branch to wharf.	4,539 85
Chaudière Junction—engine-house, &c.	40,078 39
Dalhousie—extension of wharf.	3,000 00
Drummondville—improvements.	4,234 60
Halifax—increased accommodation.	499,973 25
Indiantown and Blackville—to put railway between in condition for operation.	79,996 73
Lévis—increased accommodation.	103 07
Loggieville—improvements.	413 34
Mulgrave—improvements.	28,490 65
Newcastle—improvements.	37,721 56
New Glasgow—increased accommodation.	8,750 65

9-10 EDWARD VII., A. 1910

North Sydney—improvements..	\$ 342 82
Petit Rocher—Spur track to wharf..	15,000 00
Pictou—increased accommodation..	1,859 04
Pirate Harbour—water service..	83 70
Rivière du Loup—engine-house, &c..	112,246 31
Sackville—improvements..	26,985 46
Springhill Junction—increased accommodation..	1,647 12
Stellarton—increased accommodation..	13,316 20
Sydney—increased accommodation..	13,398 76
Sydney Mines—extension to..	4,056 06
Sydney Mines to River George—diversion of line	5,504 72
Ste. Flavie—increased accommodation..	18,311 04
Ste. Rosalie—improvements..	34,072 87
St. John—increased accommodation..	99,324 96
Truro—increased accommodation..	104,947 48
Windsor—improvements..	21 10
Locomotive and car shops with equipment..	569,994 56
New machinery for locomotive and car shops..	154,497 06
Construction—original..	365 16
Double tracking parts of line..	199,775 29
Increased accommodation and facilities..	176,955 30
New turntables..	2,369 59
Pintsch gas apparatus..	1,555 44
Strengthening bridges..	131,534 72
Water supply—to increase..	29,400 72
Air brake equipment, &c..	10,500 00
Rolling stock..	1,353,646 18
Box cars—side ladders..	6,604 70
Freight cars—air brakes..	2,104 30
Survey to ascertain the best route for an additional line from Moncton, N.B., or Amherst, N.S., to a point at or near Truro, N.S.	9,954 74
	\$ 3,867,232 16

Making the total on March 31, 1909.. \$90,994,664 06

New machinery for locomotive and car shops—

This is for additional machinery for the construction and repair of locomotives and cars and for the installation of it.

Air brake equipment, &c.—

Seventy locomotives were fitted with 'Elvin' driving box lubricators, and six hundred and two triple valves for box cars were converted into the 'K' triple valve, so as to apply the brakes simultaneously.

Rolling stock—

Four locomotives of the Pacific type for passenger service, twenty-two locomotives of the consolidation type for freight service, three locomotives for switching service, ten second-class sleeping cars, four express and baggage cars, four hundred and seventy-two box freight, four refrigerator, one hundred steel side dump cars and four steam cranes were purchased, and one milk car and two auxiliary cars were built.

Box cars—side ladders—

Nine hundred and ninety-six box freight cars were provided with side ladders, two to each car.

SESSIONAL PAPER No. 20

Freight cars—air brakes—

One hundred and thirteen cars were equipped during the year with Westinghouse automatic quick action air brakes.

Explanations in regard of the other expenditures on capital account will be found in the report of the chief engineer.

REVENUE ACCOUNT.

The gross earnings and the working expenses for the year compare as follows:—

Gross earnings.. . . .	\$8,527,069 46
Working expenses.. . . .	9,328,021 55
Difference.. . . .	\$ 800,952 09

The gross earnings compare as follows with those of the previous year :—

In 1908-9.. . . .	\$8,527,069 46
1907-8.. . . .	9,173,558 80
Decrease.. . . .	\$ 646,489 34

The earnings from passenger traffic compare as follows :—

In 1908-9.. . . .	\$2,628,218 57
1907-8.. . . .	2,711,416 98
Decrease.. . . .	\$ 83,198 41

The earnings from freight traffic compare as follows :—

In 1908-9.. . . .	\$5,502,550 58
1907-8.. . . .	6,054,493 45
Decrease.. . . .	\$ 551,942 87

The earnings from mails and express freight compare as follows :—

In 1908-9.. . . .	\$ 396,300 31
1907-8.. . . .	407,648 37
Decrease.. . . .	\$ 11,348 06

The earnings by mile of railway compare as follows :—

In 1908-9.. . . .	\$ 5,892 40
1907-8.. . . .	6,322 62
Decrease.. . . .	\$ 440 22

The earnings by train mile compare as follows :—

In 1908-9.. . . .	\$ 1 24
1907-8.. . . .	1 25

The number of passengers carried compare as follows :—

In 1908-9.. . . .	2,907,237
1907-8.. . . .	2,789,371
Increase.. . . .	117,866

9-10 EDWARD VII., A. 1910

There was an increase of 62,331 in the number of local passengers, and also an increase of 55,535 in the number of through passengers.

The weight of freight carried compares as follows :—

	Tons.
In 1908-9.	3,573,972
1907-8.	4,134,064
Decrease.	560,092

There was a decrease in local freight of 484,981 tons and also a decrease in through freight of 75,111 tons.

WORKING EXPENSES.

The working expenses compare as follows with the previous year :—

In 1908-9.	\$9,328,021 55
1907-8.	9,157,435 53
Increase.	\$ 170,586 02

The averages compare with those of last year as follows:—

Per mile run by engines—

In 1908-9.	\$ 1:0129
1907-8.	0:9285

Per mile run by trains—

In 1908-9.	\$ 1 35
1907-8.	1 25

Working expenses per mile of railway—

In 1908-9.	\$ 6,445 89
1907-8.	6,321 48

The rent paid to the Grand Trunk Railway Company, \$140,000, is included in the above in order to establish a comparison between the two years.

The permanent way and structures and all works of the railway received necessary repairs and are in good order.

During the year 861,336 ordinary ties and 311 sets of switch ties were put in.

42.6 miles of track were reballasted, 51,127 cubic yards of ballast being used.

4.19 miles of additional sidings were provided at various points.

Bridges, culverts, wharfs and buildings received necessary repairs.

The fences were repaired and 116.31 miles of fences were built.

The snow sheds and snow fences were repaired.

The rolling stock received necessary repairs and its general condition is good with the exceptions mentioned in the report of the superintendent of motive power.

One express and baggage car, two refrigerator cars and thirty-eight hopper cars were purchased ; one postal car, three box freight cars, twenty-seven platform cars, and two hopper cars were built in the work-shops of the railway, all to replace an equal number taken out of service, the refrigerator and hopper cars were of greater capacity than the ones they replaced.

STORES.

The value of stores purchased was.	\$4,078,735 82
The value of stores used was.	4,075,351 30
The value of material sold was.	257,550 16

SESSIONAL PAPER No. 20

The value of stores on hand at the end of the year was—

Miscellaneous.	\$ 556,412 56
Fuel.	432,405 06
Roadway and bridge material.	610,276 97
Total.	<u>\$1,599,094 59</u>

INTERCOLONIAL AND PRINCE EDWARD ISLAND RAILWAY EMPLOYEES' PROVIDENT FUND.

The report of this fund which has been sent separately shows—

Credit balance on March 31, 1908.	\$ 139,249 21
During the fiscal year the contribution of the employees amounted to.	75,306 41
The contribution by the railway amounted to.	75,306 41
Amounts received for refunds.	30 32
A total of.	<u>\$ 289,892 35</u>
The total expenditure was.	69,221 92
Leaving a balance of.	<u>\$ 220,670 43</u>
To which is to be added the interest.	5,227 88
Making a total amount to the credit of the fund on March 31, 1909.	<u>\$ 225,898 31</u>

During the year eighty-eight employees were retired and placed upon the fund and eleven have died, leaving two hundred and two persons on the list receiving an allowance from the fund at the end of the fiscal year.

GENERAL.

During the winter of 1908-9 a considerable quantity of snow fell on the northern portion of the line, but there were no serious delays to trains on that account. The expenditure for clearing snow and ice was \$134,434.19.

The weather during the summer of 1908 was very dry and numerous forest fires occurred by which railway property was destroyed.

On July 12, 13 and 14, 1908, forest fires which were raging at many places along the Drummond section of the line entirely destroyed the station and freight shed at Carmel, also forty-four freight cars. The books of the railway, the tickets and the greater part of the freight in the freight house were saved. At Daveluyville the station and freight shed and forty-two freight cars were destroyed. The cash-book and the through tickets were saved. At Lavergne the station and its contents were also destroyed.

On July 30, 1908, the old station-house at Saekville caught fire from the burning of the Enterprise foundry and was entirely destroyed. The freight shed was also burned.

On May 25, 1908, the freight-house at Bathurst and its contents were destroyed by fire.

On June 29, 1908, fire was discovered in one of the walls of the passenger station at Lévis. The fire was promptly put out with the assistance of the town fire brigade, and the damage caused was only slight.

On July 14, 1908, the blacksmith shop at Moneton caught fire and one-half of the roof was burned.

9-10 EDWARD VII., A. 1910

On August 21, 1908, the freight shed at St. Cyrille caught fire and was entirely destroyed with its contents.

On October 22, 1908, the coal shed at Harcourt was destroyed by fire with about forty tons of coal contained in it.

On June 29, 1908, a heavy rainstorm damaged the track near Doaktown.

On August 14, 1908, high tides caused damage to the track a short distance east of Sackville bridge.

In January, 1909, there were freshets, and one of these, on the 6th and 7th, damaged the track between Fredericton and Chatham Junction.

These damages were promptly repaired.

I regret to record the death of Mr. George M. Jarvis, superintendent of the Halifax and St. John district, which occurred suddenly on June 3, 1908, while at St. John in the discharge of his duties. He was born in 1851, entered the service of the railway in 1868, passed through the grades of telegraph operator and train despatcher, and was appointed district superintendent October 17, 1898, which position he continued to occupy until his death.

It gives me pleasure to state that he performed his duties in a careful, faithful and efficient manner in all the positions which he occupied.

Mr. J. T. Hallisey, chief train despatcher at Truro was appointed superintendent of the Halifax and St. John district instead of the late Mr. Jarvis.

I have the honour to be, Sir,
Your obedient servant,

D. POTTINGER,
General Manager, Government Railways.

M. J. BUTLER, Esq., C.E.,
Deputy Minister and Chief Engineer,
Department Railways and Canals,
Ottawa, Ont.

INTERCOLONIAL RAILWAY.

OFFICE OF THE CHIEF ENGINEER,

MONCTON, N.B., June 16, 1909.

SIR,—I have the honour to submit the following report on capital account expenditure, for the fiscal year ending March 31, 1909 :—

Improvements at Amherst—

The stone passenger station and concrete platform were completed.

Electric lighting was installed in the station.

The old baggage building was moved to the east end of the freight shed and converted into a bonded ware-room.

New roadway approaches to the station were completed.

One improved Gould-Tisdale electric semaphore was installed at the east end of the yard.

Increased accommodation at Antigonish—

A concrete platform was provided.

Subway, Avondale—

This subway was provided.

SESSIONAL PAPER No. 20

Improvements at Campbellton—

A brick oil house was built and a sand house provided.

A contract was let for a set of 22 coaling pockets, and the work practically completed.

A contract was let for an extension to the water works. The materials required for this work were supplied by the railway, and delivered on the ground.

A hot water heating system was installed in the superintendent's dwelling.

A locomotive crane for handling coal and cinders was purchased. 568 feet of sidings were laid in the yard.

Diversion of line at Chatham and branch to wharf:—

A line was located on the ground from Nelson Station, through the town of Chatham to a junction with the present line towards Loggieville.

Engine-house, &c., Chaudière Junction—

Plans and specification were prepared, tenders called and a contract let for a freight car repair shop—the work of construction is well advanced.

The coaling pockets, cinder pits and sand-house, for which the contracts were let last year, were completed.

Considerable grading was done, and 6,137 additional feet of tracks were laid in the new yard.

Improvements were made to the water service.

Electric lighting was installed in the train service building.

Extension to wharf, Dalhousie—

The wharf at Dalhousie was extended.

Improvements at Drummondville—

Some grading was done, and 3,354 additional feet of tracks were laid in the yard.

Fort Lawrence wharf—

Nothing was done under this appropriation.

Improvements at Fredericton—

Nothing was done under this appropriation.

Increased accommodation at Halifax—

At the new yard on the west side of Water street, Halifax, N.S., the excavation was completed.

The replacing of the old stone or brick sewers cut off by the excavation for the yard at Artz and Gerrish streets and Grey's lane with 18-inch cast-iron pipe, was completed and required manholes put in. Suitable catch basins to carry the water of the street gutters to the street sewers back of the wall were also put in. To take care of the drainage from house drains cut off by the excavation for the yard, as well as to provide for the drainage from houses or factories which may in future be built along the back line of the yard, an 18-inch longitudinal terra-cotta pipe sewer was laid close to the concrete wall with required manholes and wyes for present and future connections; thus, carrying the sewerage from all house drains cut off between North and Artz street to Artz street sewer, and between Artz and Gerrish street into Gerrish street sewer. All drains cut off below Gerrish street were replaced with cast-iron pipe sewers carrying the drainage to the Water street sewer, as formerly.

The concrete retaining wall at the back line of the yard, as well as that between the high and low level tracks was completed. The filling behind the wall with heavy stone rip-rap was also completed. The erection of a wooden fence, 6 feet high, on top of the retaining wall at the back line of the yard, from Intercolonial Railway power-

9-10 EDWARD VII., A. 1910

house at North street to a point south of the grain elevator near Cornwallis street, was completed, and a concrete fence built on top of the retaining wall where Artz, Gerrish streets and Grey's lane were cut off by the excavation at the back line of the yard.

Electric light poles were set in the concrete retaining wall between the high and low level tracks as the wall was being built; they being more out of the way here and most suitably placed for the lighting of the new yard. The wires were also strung for the lighting of the deep water yard.

A car cleaner's building, car fitter's and carpenter shop, and store-house were erected in the jog near North street.

A considerable portion of the track laying at the upper end of the yard was completed with required ballasting.

At the North street station the work in connection with the paving of the courtyard was completed and 282 feet 6 inches of new steel fence were erected on the new stone wall.

At Richmond, a new telegraph office building was erected and completed at the junction of the Halifax and South Western Railway with the Intercolonial.

Double-tracking Cotton Factory Branch—

The right of way from Kempt road to Campbell road was inclosed with a wire fence; and on the right of the centre line along Campbell road, by a concrete retaining wall with a wooden fence on top. The grading was completed, as well as both surface and gullet ditching. Fourteen steel-concrete culverts were constructed across the line to ensure proper drainage. One new track was laid from Kempt road to Richmond, and ballasted.

Kempt Road Subway—

The diversion of the Kempt road, so as to provide for an under crossing of the double tracks of the Cotton Factory Branch, was completed. The excavation and filling for this work extended over 1,100 feet. The subway was bounded on each side by a concrete retaining wall, on which was erected a pipe fence from the abutments to the end of the walls. A 16-inch cast-iron sewer was laid along the centre of the subway to the outlet of the main sewer of Kempt yard, with necessary manholes and side catch pits to carry the drainage from the gutters to the central sewer. At the undercrossing the temporary trestle was replaced by two abutments and a centre pedestal on which four 26 feet deck plate girder spans were erected.

Kempt Yard—

The excavation was completed, and adjoining the city of Halifax property and along Windsor street, concrete retaining walls were constructed—surmounted in the former case by a wooden fence, and in the latter by a pipe fence. The main 30-inch concrete pipe sewer with required manholes and connections with drains from the different buildings, was completed from the new engine-house to its outlet below Kempt road. The following buildings at Kempt yard, the erection of which was begun during 1907-8, were completed during 1908-9 :—

- Freight car repair shop.
- Planing mill.
- Stores and office building.
- Oil house.

Provision was made for the drainage from these to be carried to the main sewer. Fans were installed in the first two, and heating pipes provided and placed for all of these buildings.

SESSIONAL PAPER No. 20

The following were erected and completed—

Power-house.
80,000 gallon water tank.
Sand-house.
Cinder pit.
Set of 14 coaling pockets.

The fans, engines, boilers, &c., in connection with the heating plant were installed in the annex of the new engine-house. The 6-inch and 10-inch water pipes for the water supply of the Kempt yard were laid and the required hydrants and stand pipe erected.

New Engine-house, Kempt Yard—

The annex and 3 sections of the engine-house have been completed, with the exception of the flooring and considerable work has been done excavating for pits, &c., for the remaining 3 sections. The excavation for the turntable circle was removed; the ring wall and centre pier put in, and the turntable placed. The steel and other materials for the completion of this building are practically all on the site.

To put railway between Indiantown and Blackville into condition for operation—

Work in connection with putting the line between Indiantown and Blackville into condition for operation was carried on during the year. One 10-foot concrete arch culvert was constructed. Two concrete abutments and one pier were built at the Bartholomew bridge. A diversion of 2,000 feet was made in the line at White Rapid Brook to improve the alignment.

2,803 additional feet of tracks were put in at Renous bridge and Blackville.

The construction of the Renous bridge was well advanced towards completion.

Increased accommodation at Lévis—

Plans and specification were prepared for an extension to the ice-house.

Princess Pier, Lévis—

Nothing was done under this appropriation.

Improvements at Loggieville—

Plans and specification were prepared for an engine-house, freight-shed, baggage-room and for remodelling the existing station.

Improvements at Mulgrave—

The contract for filling in the jog in the existing wharf was completed.

A coal shed and trestle were provided.

A survey was made for an extension to the water works, plans and specification prepared, tenders called and a contract let. The material required for this was supplied by the railway, and the work will be completed in year 1909-10.

Considerable grading was done, and 1,432 feet of additional tracks laid.

One improved Gould-Tisdale electric semaphore was installed at Pirate harbour.

The roadway to the station was changed and improved.

Increased accommodation at New Glasgow—

The undercrossings at McLean and Dalhousie streets were completed.

Improvements at Newcastle—

The contract for the enlargement of the existing engine-house was completed.

The material required in connection with the contract of the set of 16 coaling pockets was delivered by the contractor; but the work of construction was delayed on account of coal being piled on the site.

826 additional feet of tracks were laid.

Improvements were made to the water service.

9-10 EDWARD VII., A. 1910

Improvements at North Sydney—

Under this appropriation an amount of \$342.82 was paid Murdock McDonald for land, Exchequer Court award, June, 1908.

Petit Rocher Spur Track to Wharf—

A spur track was constructed by day labour from Petit Rocher station to the wharf that was built by the Department of Public Works, a distance of 1.35 miles.

Increased accommodation at Pictou—

The car cleaner's building, for which the contract was let last year, was completed.

The dwelling for the agent was painted.

Preparations were made for building a loading platform.

Pirate Harbour Water Service—

This work is being done in connection with appropriation 'Improvements at Mulgrave.'

Engine-house, Machine-shop, &c., at Rivière du Loup—

The contract for cinder pit and a set of 21 coaling pockets was completed.

The contract work in connection with the construction of a machine-shop, boiler-house and brick chimney was carried on during the year, and was completed with the exception of work amounting to \$500, to be done in year 1909-10.

Contracts were let for three 280 horse-power boilers, two 60-ton and one 10-ton electric travelling cranes; also for the hot-air heating and piping.

The suspension foot-bridge across the river, for use and convenience of the people employed at the new shops and engine-house, was completed.

The right of way acquired for the site of the new shop and engine-house was fenced.

Considerable grading was done, and 2,713 lineal feet of additional tracks laid.

Improvements at Sackville—

A contract was let for a new freight-house, and the work of construction is well advanced. A bonded ware-room, coal-room and a water closet were provided in the freight shed.

A concrete platform was provided in connection with the new station.

One fire hydrant and two stand pipes were erected.

Considerable grading was done around the new freight-house, and 3,716 feet of additional tracks laid.

The right of way, purchased last year for site of new freight shed, was fenced.

Increased accommodation, Springhill Junction—

A hot water heating system was installed in the station.

Increased accommodation at Stellarton—

The electric light plant, for the use of the Intercolonial Railway at Stellarton, Westville and New Glasgow, was completed.

A sand-house was provided.

Increased accommodation at Sydney—

The work in connection with the raising of the Dominion Iron and Steel Company's overhead bridge to make it the required height above the Intercolonial Railway was completed.

Extension to Sydney Mines—

A car cleaner's building was provided at Sydney Mines.

The 'Toomey house' was moved to a new location across the track to the opposite side of Vicker's lane, and converted into a dwelling for the Intercolonial Railway

SESSIONAL PAPER No. 20

agent, at Sydney Mines. Plumbing and electric lighting were installed in this building.

A Tar-Macadam platform was laid in connection with Sydney Mines station. The work in connection with this extension is completed.

Diversion of Line, Sydney Mines to River George—

A line was located on the ground between George's river and Sydney Mines station.

Diversion of Public Road between St. Cyrille and Drummondville to eliminate a Crossing at Rail Level—

Nothing was done under this appropriation.

Increased accommodation at Ste. Flavie—

The work in connection with the contracts for an oil-house, coaling pockets, switchman's shanty, car inspector's building, car-cleaner's building, cinder pit, and an extension to freight-shed was completed. An ice-house was also provided.

Some grading was done, and 4,050 feet of additional sidings were put in the yard.

Increased accommodation at St. John—

The work in connection with the erection of the Stanley and Wall street overhead bridges was completed.

A sand-house was provided.

The old stores building at Gilbert's lane was converted into a car-cleaner's building, to be used jointly by the Canadian Pacific Railway, and Intercolonial Railway.

A set of 14 coaling pockets were erected.

A locomotive crane for handling coal and cinders was provided.

A new batter building was built.

A pole line was erected, and an arc light system installed for lighting the new yard.

The new flour-shed was wired for electric lights.

A yard office was built at the station—this was necessary on account of the double-tracking through the yard.

The road approach to the freight-shed was paved with granite blocks. Granite blocks were also provided for paving the station yard.

Jardine's bridge was widened to admit two more tracks being laid.

11,032 feet of additional tracks were laid in the yard and ballasted.

Improvements at Ste. Rosalie—

The work in connection with the contract for a four-stall engine-house and stores and office building was completed.

A steam-heating system was installed in the engine-house, stores and office building and water tank.

A cinder pit was provided.

The steam pump and 150 horse-power boiler that were purchased last year for use in connection with the water supply were put in service.

A dwelling was provided for the Intercolonial Railway agent.

Some grading was done, and 10,864 additional feet of tracks laid in the new yard.

A highway was constructed on the Intercolonial Railway property at the south side of the Grand Trunk Railway, for the purpose of eliminating 6 farm crossings through the new yard.

Increased accommodation at Truro—

The contract for a car-cleaner's building, sand-house, straightening Leper brook, building concrete masonry for two approaches to the new yard and one highway bridge was completed.

Plans and specification were prepared, tenders sought and a contract let for the

9-10 EDWARD VII., A. 1910

construction of a highway at the east end of the yard to take the place of Christie's lane, which was closed by the construction of a track in the new yard; also for crib-work protection at the ends of the bridge abutments to the approaches to the new yard.

A set of 14 coaling pockets were built by contract.

88,427 square feet of land, in connection with the improvements to the new yard were purchased.

A large quantity of grading was done, and 28,640 lineal feet of additional tracks laid in the new yard.

Improvements were made to the water service.

One improved Gould-Tisdale electric semaphore was installed at the north end of the yard.

Improvements at Windsor—

Nothing was done under this appropriation.

Locomotive and Car-shops with equipment and New Freight Yard at Moncton—

Work at the new shops has been progressing favourably during the year.

The contract work in connection with the following buildings was completed.

Freight car repair-shop, planing-mill, passenger car repair-shop, stores and office building, paint-shop, power-house, gas-house, dry kiln and locomotive shops; which includes erecting-shop, boiler-shops, machine-shop, blacksmith-shop and tool, bolt and brass-rooms.

The transfer table for transferring cars between the passenger car repair-shop and paint-shop, was completed.

Two 60-ton electric travelling cranes were put in place in the erecting-shop.

Two 10-ton electric travelling cranes were erected in the machine-shop.

Two 35-ton and one 10-ton electric travelling cranes were put in place in the boiler-shops.

A 16-ton hand-travelling crane was erected in the power-house.

The gas plant and gas engines were erected.

The fan-heating system for the shops was installed complete.

Two Babcock & Wilcox boilers, 500 horse-power each, were installed in the power-house.

The work in connection with the electrical equipment was carried on during the year and the installation is well advanced and partly in operation.

A large amount of grading and ballasting was done, and 36,952 feet of tracks were laid in the yard.

For details of machinery see report of G. R. Joughins, superintendent of motive power.

New Machinery for Locomotive and Car-shops—

For details of this appropriation see report of G. R. Joughins, superintendent of motive power.

Original construction—

Under the appropriation the following amounts were paid:—

Alexander Philip's estate, on the Dartmouth branch, .273 of an acre of land and interest, \$182.26. R. T. McIlreith for legal expenses in connection with the above \$44.02. George W. Kyte for legal expenses in connection with the paint claim at Point Tupper, \$88.88. R. T. McIlreith and Maggie McDonald for .65 of an acre of land at Riverside, Inverness County, Cape Breton, \$50.

Double tracking parts of line—

Work in connection with double tracking between Moncton and Painsec junction was carried on during the year. New double track bridges were placed at Hall's creek and Humphrey's mill stream.

SESSIONAL PAPER No. 20

The culverts were extended; all the cuts graded, and the old line lowered to new grades. There remains some track to be lifted to new grade, and ballasting of tracks, which will be done early in fiscal year 1909-10.

A line was located on the ground for new double track between Painsec junction and Calhoun's; also for second track on present right of way from Calhoun's to Dorchester.

A new double track line on low grade, to avoid Dorchester Summit, was located on the ground between Dorchester and Sackville.

A loop line was located on the ground for the north yard across Hall's creek to Humphrey's.

One improved Gould-Tisdale electric semaphore was installed at the west end of Painsec Junction yard.

Increased accommodation and facilities along the line—

The following work was done under this appropriation —

Amqui—Hot water heating installed in the station.

Acadiaville—The loading platform was extended.

Acadiaville—A sewer was built in connection with the station.

Adamsville—The station was moved and extended.

Boisdale—A contract was let for enlarging the existing station.

Bic—A baggage-room was built.

Beaver Brook—A new freight-shed was provided.

Bathurst—Toilet accommodation was put in the station.

Bloomfield—The existing station was enlarged.

Cap St. Ignace—The station was extended.

Cross Creek—A new freight shed was provided, and the station remodelled.

Chelmsford—A shelter was provided.

Chatham Junction—Hot water heating was installed in the station and agent's dwelling.

Cedar Hall—A new station, freight-house and platform were provided, and the old station converted into a dwelling for the agent.

De Lotbinière—The station was extended.

Durham—A shelter was provided.

Doaktown—A new freight-shed, baggage-room and oil-house were provided, and the existing station enlarged.

Doirion's—A shelter was provided.

Elgin Road—Additional loading accommodation was provided.

Fredericton—Toilet accommodation was provided in the station.

Iona—The existing station was moved and remodelled.

Kempt—Additional loading ground was provided.

Matapedia—Hot water heating was installed in the station.

Moncton—A car cleaner's building was provided.

Milford—A loading platform was provided.

McKenzie—A contract was let for a combined station and dwelling.

New Mills—The baggage-room was extended and the station enlarged.

Norton—Hot water heating was installed in the station; also water supply and toilet accommodation.

Oxford—Hot water heating and toilet accommodation were put in the station.

Pugwash—The freight shed was enlarged, and hot water heating put in the station. The wharf was stripped to low water and rebuilt some feet higher than old wharf; it was filled with stone and gravel and one additional track provided. The freight shed on the wharf was removed.

Pomquet—A cattle pen was provided.

Rimouski—A new freight shed was provided.

Rivière Ouelle.—A new loading platform was provided.

9-10 EDWARD VII., A. 1910

St. Jean Port Joli—The existing freight-shed was extended and hot water heating was installed in the station.

St. Romuald—The existing freight-shed was extended.

Salmon Lake—A baggage-room was provided, water put in the station and a loading platform built.

Sayabec—A coal and oil-house and baggage-room were provided.

Scoudouc—A new station, coal and oil-house, and loading platform were provided.

Ste. Monique—A coal-shed and water closet were provided.

St. Eloi—The existing freight-shed was extended.

Sacré Cœur—The station was extended.

Upper Blackville—A new station was provided.

Zionville—A combined station and freight-shed was provided.

Fencing—15,859 rods of wire fence were erected on the Canada Eastern where the right of way had never been fenced.

Wells were provided at the following places :—

Beaver Brook, Eel River, Red Pine, Millstream, River Ouelle, St. Germain, Hoffat's, Salt Springs, Barney's River, Indiantown, Adamsville and Pugwash.

Improved Gould-Tisdale electric semaphores were installed at Laurier, St. Eugène, Sayabec, Cap St. Ignace and Chatham Junction.

SIDINGS.

	Feet.
Aston Junction, siding extended.. . . .	1,286
Adamsville, new siding.. . . .	920
Aulac, new siding.. . . .	625
Black River, new siding.. . . .	1,600
Bayfield Road, new siding.. . . .	1,510
Chaudière Curve, new siding.. . . .	675
Campbellton, new siding.. . . .	1,352
DeLotbinière, siding extended.. . . .	715
Daveluyville, siding extended.. . . .	868
Durham, siding extended.. . . .	100
East Mines, siding extended.. . . .	383
Estmere, siding extended.. . . .	252
Fortier's, new siding.. . . .	2,103
Fort Lawrence, new siding.. . . .	2,021
Heppel's, new siding.. . . .	207
Kinsac, new siding.. . . .	1,532
L'Islet, siding extended.. . . .	382
Lock Broom, new siding.. . . .	285
McLeod's new siding.. . . .	324
Milford, new siding.. . . .	200
Malagash, new siding.. . . .	1,470
Monastery, new siding.. . . .	1,925
Oxford Junction, new siding.. . . .	2,229
Rivière Ouelle, siding extended.. . . .	108
Rimouski, new siding.. . . .	880
Rogersville, new siding.. . . .	700
St. Eugène, siding extended.. . . .	2,036
Ste. Monique, new siding.. . . .	2,500
St. Alexandre, siding extended.. . . .	225
St. François, siding extended.. . . .	200
St. Paschal, siding extended.. . . .	270
St. Michel siding extended.. . . .	750
St. Valier, siding extended.. . . .	700
St. Jean Port Joli, siding extended.. . . .	730

SESSIONAL PAPER No. 20

	Feet.
St. Henri Junction, new siding..	1,994
St. Fabien, siding extended..	600
Salisbury, new siding..	1,060
Seoudouc, new siding..	1,400
Thibault's, siding extended..	598
Taylor Road, new siding..	1,455
Upper Blackville, siding extended..	163
Villeroy, siding extended..	690
Windsor Junction, new siding..	564

New Turntables—

The 75-foot through turntable that was under contract for Sussex, was delivered and erected at Halifax to replace the one transferred from Halifax and erected at Sussex in year 1907-8.

A 70-foot through turntable was purchased and erected at Newcastle.

A 75-foot through turntable was delivered at Loggieville, and will be erected during the year 1909-10.

Pintsch gas apparatus—

A pintsch gas apparatus was installed complete at Lévis.

To strengthen bridges—

The following bridges were erected in place during the year :—

	Feet.	Inches.
Musquash—1 through plate girder span..	106	— 8
Model Farm—1 deck plate girder span..	27	— 10
Rothsay (Gondola)—1 deck plate girder span..	28	— 10
Rothsay (Davidson's)—1 deck plate girder span..	35	— 6
Anagance—1 deck plate girder span..	32	— 8
Truro (Leper Brook)—4 deck plate girder span..	21	— 0
Meadowville—1 beam span..	15	
Meadowville—1 beam span..	13	
Meadowville—1 deck plate girder span..	24	— 6
Meadowville—1 deck plate girder span..	25	
River John—1 beam span..	13	— 8
Sylvester—1 deck plate girder span..	18	— 6
Humphrey's—2 deck plate girder spans for double track	98	
Hall's Creek—2 deck plate girder spans, for double track	56	
Hall's Creek—2 deck plate girder spans, over subway, for double track..	15	— 6
Bathurst—1 beam span..		
St. Alexis—1 beam span..	12	— 2
St. Alexis—1 beam span..	12	— 4
St. Alexis—1 beam span..	14	— 7
Millstream—1 beam span..	11	— 2
Millstream—1 beam span..	12	— 5
Assametquaghan—1 beam span..	14	— 3
Assametquaghan—1 beam span..	13	— 1
Assametquaghan—1 beam span..	13	— 6
Causapscal—1 beam span..	13	— 4
Causapscal—1 beam span..	11	— 2
Causapscal—1 beam span..	14	— 4
Causapscal—1 beam span..	12	— 9
Causapscal—1 beam span..	15	— 2
Matapedia—1 beam span..	16	— 1
Moffat's—1 beam span..	16	— 9

9-10 EDWARD VII., A. 1910

	Feet.	Inches.
Milner's overhead bridge, 1 railway plate girder span..	45	— 6
Union St. overhead bridge, 1 highway plate girder span.	74	— 1
Pomquet—1 through plate girder span..	86	— 6
Harbour au Bouche—1 deck plate girder span.... .	18	— 3
Bear Brook—1 deck plate girder span..	14	— 9
Brierly's Brook—1 deck plate girder span..	19	— 10
Beaver Brook—1 deck plate girder span..	21	
Mount Uniacke—1 beam span..	14	— 9
Mount Uniacke—1 deck plate girder span..	23	
Newport—1 beam span..	14	— 11
Newport—1 beam span..	15	
Newport—1 deck plate girder span..	19	
Newport—1 beam..	15	

Steel work was delivered for bridges at St. Octave (2), Kempt (2), Cedar Hall (3), Amqui (2). Beau Rivage (2). Trois Saumons, Hadlow and St. Romuald (10). These will be erected in place next year.

11,000 Hillside paving blocks were delivered for paving roadway on Union street overhead bridge, Moncton, N.B.

Isle Verte, St. Henri, Boyer River and Bic bridges were painted.

A 90-foot deck plate girder span was erected at Pine Tree, with new concrete masonry.

To increase water supply—

During the year work was done on water works at the following places :—

Doaktown, Trois Pistoles, Durham Bridge, Gibson, Charlo, St. Appollinaire, Gleggarry, Piedmont, St. Charles Junction and Little Métis.

Air-brake equipment—

For details of this appropriation, see report of G. R. Joughins, superintendent of motive power.

Rolling stock—

For details of this appropriation, see report of G. R. Joughins, superintendent of motive power.

Side ladders to box cars—

For details of this appropriation, see report of G. R. Joughins, superintendent of motive power.

Air-brakes to freight cars—

For details of this appropriation, see report of G. R. Joughins, superintendent of motive power.

To exchange draw bars on freight cars—

For details of this appropriation, see report of G. R. Joughins, superintendent of motive power.

To provide for Survey to ascertain the best route for an additional line from Moncton, N.B., or Amherst, N.S., to a point at or near Truro, N.S.

A preliminary instrumental survey was made for a low-grade single track railway from Amherst to Truro, via Parrsboro', and plan, profile and estimates were prepared.

To provide a 100-ton track scale at Aston Junction—

This scale was provided.

SESSIONAL PAPER No. 20

To provide siding for passenger cars at Gibson—

Nothing was done under this appropriation.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) WM. B. MACKENZIE,

Chief Engineer.

D. POTTINGER, Esq., I.S.O.,

Member Govt. Railways Managing Board,
Moncton, N.B.

INTERCOLONIAL RAILWAY.

OFFICE OF THE ENGINEER OF MAINTENANCE,

MONCTON, N.B., May 27, 1909.

SIR,—I have the honour to submit the report of the Maintenance of Way and Works Department for the year ending March 31, 1909.

TRACK.

During the year 147,265 miles of 56, 58, 67, 80 and 110-pound rails were taken up and replaced with 67 and 80-pound rails.

TIES.

During the year 861,336 ordinary ties and 311 sets of switch ties were put in the track.

BALLASTING.

During the year 42.6 miles of track were ballasted, using 51,127 cubic yards of gravel and ashes.

SWITCHES AND SEMAPHORES.

New semaphore signals were erected at the following stations :—

Cap St. Ignace.. . . .	1
Mitchell.. . . .	1
Mulgrave.... .	1
Ste. Monique.. . . .	1
St. Eugène.. . . .	1

One hundred and thirty-eight new switches were installed during the year.

New telegraph signals were provided at the following stations :—

Daveluyville.... .	1
De Lotbinière.. . . .	1
Point Lévis.. . . .	1

Necessary repairs were made to all semaphores, switches and telegraph signals, throughout the line.

SIDINGS.

During the year 4.19 miles of additional siding accommodation has been provided at different points on the line for maintenance account.

9-10 EDWARD VII., A. 1910

FENCE BUILT BY OUR OWN MEN.

8.45 miles of woven and barbed wire fence was built at different points on the line by our own men.

Built by contract, 107.86 miles of woven wire fencing.

Necessary repairs were made to fences throughout the line.

SNOW FENCES.

There was built during the year 3,215 rods of stationary snow fence 8 feet high.

Necessary repairs were made to snow sheds and snow fences, where required.

WHARFS AND TRESTLES.

Repairs.

St. John, long wharf.	Richmond, coal trestle.
St. John, coal trestle.	Chatham, wharf.
St. John, ballast wharf.	Drummondville, coal trestle.
St. John, Courtney Bay Branch, breakwater.	Montmagny, ice breakers.
Halifax, pier No. 2.	Mulgrave, wharf.
Halifax, pier No. 3.	North Sydney, wharf.
Halifax, pier No. 4.	Prince's Pier, wharf.
Halifax, pier No. 5.	Point du Chêne, wharf.
Halifax, Cunard's wharf.	Point Tupper, wharf.
Halifax, D.W.T., landing stage.	Pictou, wharf.
Halifax, D.W.T., coal trestle.	Pictou Landing, wharf.
Richmond, pier No. 6.	River Ouelle, wharf.
Richmond, pier No. 8.	Trois Pistoles Branch, trestle.

BRIDGES AND CULVERTS.

Repairs.

Avondale, culvert.	Halifax, North Street, overhead bridge.
Aulac, culvert.	Hampton, culvert.
Aston Jct., culvert.	Indiantown Branch, culverts.
Bear Brook, bridge.	Lakeside, overhead bridge.
Blackville, bridge.	Laurier, culvert.
Benjamin River, bridge.	Munroe's, bridge.
Bathurst, culvert.	Mill Brook, bridge.
Bic, culvert.	Milners', culvert.
Bagot, culvert.	Marysville, bridge.
Cross Creek, bridge.	Manseau, bridge.
Cross Creek, culvert.	Nappan, overhead bridge.
Chatham, culverts.	Nicolet Branch, culverts.
Chatham Jct., culverts.	Ottawa Brook, bridge.
Causapscal, culvert.	Oxford Jct., culvert.
Cacouna, culvert.	Pictou, culvert.
Chaudière Jct. culvert.	Pomquet, bridge.
Chaudière, culvert.	Pugwash Jct., culvert.
Carmel, culverts.	Passekeag, overhead bridge.
Carmel, overhead bridge.	Quispamsis, overhead bridge.
Dewar's, bridge.	River Denys, bridge.
Doaktown, culvert.	River du Loup, bridge.
Doaktown, bridge.	River du Loup, culvert.
Dickie's, bridge.	River du Loup Wharf Branch, culverts.
Dartmouth, bridge.	River Ouelle, culvert.
Dartmouth, culvert.	Stellarton, culvert.
Dartmouth, ferry bridge.	St. John, Wall Street, overhead bridge.
Daveluyville, bridge.	St. John, Dorchester Street, overhead bridge.
Daveluyville, culvert.	St. John, Jardine's bridge.
Dessaint, culvert.	St. John, Island Yard, culverts.
DeLotbinière, culvert.	St. John, Island Yard, foot bridge.
Evans', culvert.	St. Eloi, culvert.
Fredericton, bridge.	St. André, culvert.
Halifax, Cotton Factory Branch, culverts.	

SESSIONAL PAPER No. 20

Ste. Hélène, culvert.
 St. Joseph, culverts.
 St. Pacôme, culvert.
 Ste. Louise, culverts.
 St. Alexandre, culvert.
 St. Léonard, culvert.
 St. Eugène, culvert.
 St. Appollinaire, culvert.
 St. Cyrille, culvert.

St. Edward, culvert.
 Ste. Monique, culvert.
 Upper Cross Creek, culvert.
 West River, bridge.
 Westville, culvert.
 Wallace, bridge.
 West Merigomish, culvert.
 West Merigomish, bridge.

MASONRY WORK DONE.

Repairs.

Fall River, west of, box culvert.
 Gordon Summit, 1 mile west of, box culvert.
 Gordon Summit, 1 mile west of, pipe culvert.
 Gordon Summit, $\frac{1}{2}$ mile west of, bridge.
 Between Graham's and Brookefield, culvert.
 Grand Lake, $\frac{1}{2}$ mile east of, bridge.
 Hansford, $\frac{1}{2}$ mile east of, tool house chimney.
 Hilden, station chimney.
 Hilden, west of, bridge.
 Kinsack, culvert.
 Kinsack, $\frac{1}{2}$ mile west of, bridge.
 Between Leeland and Kinsack, culvert.
 Lansdowne, $\frac{3}{4}$ mile west of, culvert.
 Lorne Station, 2 miles west of, box culvert.
 Lorne Station, $\frac{1}{2}$ mile west of, box culvert.
 Lorne, (old siding), $\frac{1}{2}$ mile west of, culvert.
 Milford, culvert.
 Milford, east end of yard, culvert.
 Milford, 1 mile east of, culvert.
 Shubenacadie, (Miller's Brick Yard), box culvert.
 St. Pierre, box culvert.
 St. Pierre, culverts.
 Truro, carpenter shop chimney.
 West River, $1\frac{1}{2}$ miles east of, culverts.
 West River, 1 mile east of, box culverts.
 West River, $\frac{3}{4}$ mile east of, culvert.

PAINTING.

Bridges.

Amqui, bridges No. 1 and 6.
 Assametquaghan, bridge No. 29.
 Athol, bridge No. 10.
 Anagance, bridge No. 6.
 Alba, bridges Nos. 27 and 3.
 Black River, bridge No. 3.
 Bic, bridges Nos. 4 and 5.
 Belmont, bridges Nos. 1 and 2.
 Brookville, bridge No. 3.
 Belledune, bridge No. 7.
 Bathurst, bridges Nos. 9 and 18.
 Beaver Brook, bridge No. 13.
 Blackville, bridge No. 3.
 Conn's Mills, bridge No. 6.
 Chaudière Curve, bridges Nos. 1 and 12.
 Cedar Hall, bridge No. 17.
 Causapsal, bridges Nos. 14 and 11.
 Daveluyville, bridge No. 1.
 DeLotbinière, bridges Nos. 1, 5 and 10.
 Dessaint, bridge No. 10.
 Debert, bridge No. 10.
 Darling's Brook, bridge No. 13.
 Dawlin's Brook, trestle.
 Elgin Road, bridge No. 4.
 Gloucester Jct., bridges Nos. 3, 5 and 6.
 Glengarry, bridge No. 3.
 Grand Lake, bridge No. 1.
 Hilder, bridges Nos. 1 and 9.
 Hampton, bridge No. 11.
 Holm's Brook, bridge No. 16.
 Horn's Brook, bridge.
 Kempt, bridge No. 20.
 Lemieux, bridge No. 3.
 Laurier, bridges Nos. 18 and 19.
 L'Islet, bridge No. 3.
 Manseau, bridge No. 1.
 Montmagny, bridge No. 3.
 McKenzie, bridge No. 10.
 Mud Creek, bridge No. 4.
 Malagash, bridges Nos. 23, 25, 28 and 29.
 Mulgrave, ferry bridge.
 McKinnon's Harbour, bridges Nos. 5 and 13.
 McDonald's, trestle.
 McIntyre's Lake, bridge No. 13.
 Norton, bridge No. 12.
 New Mills, bridges Nos. 4 and 12.
 Nash's Creek, bridges Nos. 7 and 8.
 Nigadoo, bridges Nos. 13 and 15.
 Old Lake Road, bridge No. 2.
 Onslow, bridge No. 3.
 Oxford, bridge No. 24.
 Orangedale, bridges Nos. 1, 10 and 20.
 Ottawa, Brook, bridge No. 16.
 Point Tupper, ferry bridge.
 Pugwash, bridges Nos. 4 and 14.
 Quispamsis, bridges Nos. 2, 4, 6 and 14.
 River Ouelle, bridge No. 2.
 River Philip, bridge No. 6.
 Riverside, bridge No. 4.
 River John, bridge No. 3.
 Riverdale, bridge No. 1.
 River Denys, bridges Nos. 3 and 23.
 River du Loup Wharf Branch, bridge No. 5.
 Ste. Rosalie, bridge No. 1.
 St. Apollinaire, bridge No. 1.
 St. Nicholas, bridge No. 3.
 St. Romuald, bridge No. 4.
 Ste. Louise, bridges Nos. 1 and 10.

9-10 EDWARD VII., A. 1910

Ste. Anne, bridge No. 4.	Stewiacke, bridges Nos. 4 and 6.
St. Pacôme, bridges Nos. 3 and 4.	St. John, bridges Nos. 2 and 3.
St. Philippe de Neri, bridges Nos 6 and 10.	Trois Saumons, bridges Nos. 3 and 5.
St. Paschal, bridge No. 3.	Truro, bridges Nos. 14, 15 and 16.
St. Eloi, bridge No. 7.	Tatamagouche, bridge No. 3.
St. Anaclet, bridges Nos. 2, 9 and 10.	Union, bridge No. 1.
Ste. Luce, bridges Nos. 5, 7 and 8.	Villeroey, bridge No. 1.
St. Moise, bridges Nos. 1 and 7.	Wellington, bridge No. 1.
Sayabec, bridges Nos. 1 and 8.	Wallace, bridges Nos. 2, 3 and 13.
Salmon Lake, bridge No. 24.	West Bay Road, bridges Nos. 4, 17 and 23.
St. Alexis, bridge No. 1.	Walker's Gulch, trestle.
Salmon River, bridge.	Four Plate Girder, bridge No. 5.

BUILDINGS.

Repairs.

Apohaqui, freight house.	Moncton, general manager's house.
Bedford, agent's dwelling.	Monastery, station.
Bathurst, station.	Oxford, station.
Calhoun's, flag station.	Richmond, station.
Chatham Jct., station.	Shubenacadie, station roof.
Conn's Mills, station.	Springhill Jct., station.
Dorchester, station.	Sussex, freight house.
Debert, station.	Salisbury, station.
East Mines, station.	St. John, water tank.
Elmsdale, station roof.	Scotsburn, station.
Enfield, station roof.	Truro, freight house roof.
Halifax, No. 4 pier shed.	Tatamagouche, station.
Hilden, station.	Westchester, station.
Levis, station and baggage room.	Wallace, station.

BUILDINGS AND PLATFORMS.

Repairs.

Necessary repairs were made to stations and dwellings at the following places :—

Alma.	Bagot.
Afton.	Cleveland.
Antigonish.	Conn's Mills.
Avondale.	College Bridge.
Athol.	Cold Brook.
Amherst.	Coal Branch.
Anagance.	Chatham.
Apohaqui.	Canaan.
Adamsville.	Chatham.
Assametquaghan.	Cross Creek.
Amqui.	Charlo.
Aston Jct.	Craig's.
Boisdale.	Cedar Hall.
Beaver Cove.	Campbellton.
Brown's Point.	Causapsal.
Bayfield Road.	Cacouna.
Burnside.	Chaudière Jct.
Bedford.	Chaudière Curve.
Brookfield.	Chaudière.
Belmont.	Cap St. Ignace.
Boundary Creek.	Carmel.
Bloomfield.	Denmark.
Brookville.	Dartmouth.
Buctouche Jct. Tower.	Debert.
Barnaby River.	Dorchester.
Boiestown.	Doaktown.
Blackville.	Dalhousie Jct.
Beaver Brook.	Dalhousie.
Bathurst.	Dessaint.
Bic.	DeLotbinière.

SESSIONAL PAPER No. 20

Daveluyville.	Picton.
Drummondville.	Pugwash Jct.
Elmsdale.	Pugwash.
Evans'.	Pirate Harbour.
Fairview.	Piedmont.
Folleigh.	Pomquet.
Flat Lands.	Painsec Jct.
George's River.	Petitcodiac.
Grand Narrows.	Portage Ballast Pit.
Glengarry.	Pointe du Chêne.
Greenville.	Petit Rocher.
Gibson.	River John.
Gloucester Jct.	Rockingham.
Heatherton.	Riversdale.
Harcourt.	River Philip.
Hadlow.	Rothesay.
Harlaka Jct.	River Glade.
Isle Verte.	Riverside.
James River.	Red Pine.
Jones'.	Rimouski.
Jubilee.	River du Loup.
Jacquet River.	River Ouelle.
Kempt.	Sydney.
Lock Broom.	Shenacadie.
Lyons' Brook.	Sylvester.
Lansdowne.	Scotsburn.
Londonderry.	Stellarton.
Little Metis.	South River.
Levis.	Stewiacke.
Letellier.	Sackville.
Laurier.	Springhill Jct.
Lemieux.	Salt Springs.
Mines Road.	Salisbury.
Meadowville.	Shediac.
Malagash.	Sussex.
Mulgrave.	Sunny Brae.
Merrigomish.	Scoudouc.
Marshy Hope.	Salmon Lake.
Monastery.	Sayabec.
Maccan.	St. Moise.
Memramcook.	St. Alexis.
Moncton.	St. Octave.
Marysville.	Sacré Cœur.
Moffatts'.	St. Flavie.
Matapedia.	St. Fabien.
Millstream.	St. Eloi.
Montmagny.	St. Anaclet.
Mitchell.	St. Simon.
McKinnon's Harbour.	St. Luce.
McGivneys.	St. Pierre.
McNeish's.	St. Joseph.
North Sydney.	St. Romuald.
North Sydney Jct.	St. Charles Jct.
New Glasgow.	St. Hélène.
Nappan.	St. Jean Port Joli.
Norton.	St. Henri Jct.
Nauwigewauk.	St. François.
Newcastle.	St. Alexandre.
Nelson.	St. Michel.
Nash's Creek.	St. Anne.
New Mills.	St. Leonard Jct.
Nicolet.	St. Wenceslas.
Orangedale.	St. Monique.
Oxford.	St. Rosalie.
Oxford Jct.	St. Nicholas.
Old Lake Road.	St. Cyrille.
Point Tupper.	St. Apollinaire.

9-10 EDWARD VII., A. 1910

St. Eugène.
St. Germain.
Tatamagouche.
Trenton.
Tracadie.
Truro.
Toryburn.
Upper Dorchester.
Villeroy.
Valley.

West Bay Road.
Wallace.
Wallace Bridge.
Westville.
Woodburn.
West Merigomish.
Waverley.
Westchester.
Wentworth.
West River.

Iron bars were placed on freight-shed doors and windows, where required.

BUILDINGS AT ST. JOHN.

The following repairs were made to buildings, &c., at St. John :—

Sheds Nos. 1, 2, 3, 7, 8, 9 and 11.
Flour shed.
Train shed.
Island Yard Office.
Irvine House.
Station.
Loading platform.
Hand car house.
Battery room for electric semaphores.
Loading platform at ballast wharf.
Cattle pen.
Store house foundation.

Elevator.
Baggage room.
Wash house.
Dwellings.
Ticket office, King Street.
Mill Street Crossing Gates.
Mail room.
Coachmen's house.
Yardmaster's office.
Freight office.
Building for oil and waste.
Tower house.

BUILDINGS AT HALIFAX AND RICHMOND.

The following repairs were made to buildings, &c., at Halifax and Richmond :—

Sheds Nos. 1, 2, 3, 4 and 8.
North Street Gas House.
Cunard property, buildings and wharf.
North Street Station.
Loading platform at D.W.T.
Milk platform, North Street.
Houses, Campbell Road, Nos. 218 and 171
Cattle shed.
Ticket office, Hollis Street.
Track Buildings, D.W.T. and North Street.
Richmond station.
Machine shop.
Car shop.

Coal shed.
Grain elevator.
Stevedore shelter.
Hay shed.
Watchmen's houses.
D.A.R. shed.
Postal building.
Carpenter shop.
Train shed.
Immigration building.
North Street Power House.
Car cleaning shed.
Shunter's shanty.

The following round-houses and shops were repaired :—

Sydney.
North Sydney.
Point Tupper.
Pirate Harbour.
Pictou.
Stellarton.
Oxford Jct.
Dartmouth.
Amherst.
Springhill Jct.
Moncton.

Point du Chêne.
Sussex.
Newcastle.
Boiestown.
Chatham.
Loggieville.
Campbellton.
River du Loup.
Chaudière Jct.
Drummondville.

Repairs.

Station and loading platforms were repaired at the following places :—

Anagance.
Apoahqui.
Assametquaghan.
Ball's Creek.

Bloomfield.
Bryenton's siding.
Blackville.
Belledune.

SESSIONAL PAPER No. 20

Bathurst.	Nauwigewauk.
Cold Brook.	Norton.
Chatham Jct.	Newcastle.
Carroll's.	Oxford Jct.
Cross Creek.	O'Donnell's.
Causapscal.	Penobsquis.
Cedar Hall.	Petitcodiac.
Carmel.	Passekeag.
Chaudière.	Quispamsis.
Doaktown.	Rothsay.
Dalhousie.	Riv. du Loup.
Dalhousie Jct.	Rivière Ouelle.
DeLotbinière.	Rivière Ouelle Wharf.
Daveluyville.	Stewiacke.
Elgin Road.	Salisbury.
Flat Lands.	Sussex.
Greenville.	Sunny Brae.
Gibson.	Sayabec.
Humphrey's.	Salmon Lake.
Hampton.	St. Charles Jct.
Jubilee.	St. Michel.
Jacquet River.	St. François.
Kent Jct.	St. Philippe.
Kenan's.	St. Valier.
Londonderry.	St. Pacôme.
Ludlow.	St. Paschal.
Little Metis.	St. Wenceslas.
L'Islet.	St. Cyrille.
Laurier.	St. Germain.
Moncton.	Ste. Rosalie.
Model Farm.	St. Leonard Jct.
Marysville.	Thomson.
Matapedia.	Torryburn.
Montmagny.	Westchester.
McGivney's.	

New Buildings along the Line.

The following new buildings, &c., were erected along the line, as follows :—

Bathurst, freight shed.	Maccan, water closets.
Campbellton, freight shed.	Moncton, summer house for general manager.
Campbellton, carpenter shop.	Moncton, tool house.
Campbellton, temporary buildings for oil.	Moffatt's, coal and oil building.
Chaudière Jct., track scales.	New Glasgow, two watchman's shanties.
Coughlans', shelter and platform.	New Glasgow, store room in freight shed.
Covered Bridge, shelter.	Peniac, shelter.
Cook's Brook, shelter.	Rivière du Loup, switchman's shanty.
Cap St. Ignace, tool house.	Rivière du Loup, track scales.
DeLotbinière, kitchen in foreman's dwelling.	Sackville, temporary freight shed.
Drummondville, lumber shed.	Ste. Monique, station, freight, shed, coal, oil and privy building.
Grangeville, shelter rebuilt.	Ste. Flavie, coal and oil shed.
Grey's Rapids, shelter and platform.	Ste. Flavie, track scales.
Levis, cattle pen.	St. John, track scales.
Ludlow, shelter.	Truro, switchman's shanty.
Mitchell, tool house.	
Millstream, agent's water closets.	

GENERAL.

New buffers were made and set up at different points on the line.

Repairs were made to crossings on the line at various points, where required.

Gates and cattle-guards have been repaired throughout the line.

Glass was put in and glazing done where necessary.

Ladders for buildings and semaphores were provided where necessary throughout the line.

9-10 EDWARD VII., A. 1910

Outhouses and approaches to crossings were whitewashed where required.

Necessary repairs were made to turn-tables where required.

Semaphores, switches and telegraph signals have been painted throughout the line.

Necessary repairs have been made to hand-cars, trollies, baggage trucks and wheel-barrows, throughout the line.

Sign boards were made and put up where required.

Boxes were made for packing second-hand bolts and spikes, when necessary.

Necessary repairs were made to steam shovels, steam cranes, pile-drivers, &c.

I beg leave to report that the road has been kept up to its standard efficiency and, I believe, was never better than at the close of the year.

I have the honour to be, sir,

Your obedient servant.

(Sgd.) T. C. BURPEE,

Engineer of Maintenance of Ways and Works.

D. POTTINGER, Esq.,

Member, Government Railways Managing Board,
Moncton, N.B.

INTERCOLONIAL RAILWAY OF CANADA.

OFFICE OF THE SUPERINTENDENT OF MOTIVE POWER,

MONCTON, N.B., May 29, 1909.

SIR,—I have the honour to submit herewith the annual report of the operations of the motive power department for the year ending March 31, 1909.

I might add that the general condition of the rolling stock is good, with the exception of the cars and locomotives condemned as shown in the attached report, and the six large freight locomotives that are out of service waiting to have the system of steam distribution changed from compound to simple.

Notwithstanding the crippled condition that our shops have been in since the fire in February, 1906, the equipment is, generally, in good shape as stated above.

I am, sir,

Your obedient servant,

G. R. JOUGHINS,

Superintendent of Motive Power.

Mr. D. POTTINGER, I.S.O.,

General Manager Canadian Government Railways,
Moncton, N.B.

INTERCOLONIAL RAILWAY.

OFFICE OF THE MECHANICAL ACCOUNTANT,

MONCTON, N.B., May 28, 1909.

SIR,—I beg to submit herewith the report of the operations of the mechanical department for the year ended March 31, 1909, as follows :—

A.—Statement showing the number of locomotives and the various classes of other rolling stock on the line.

SESSIONAL PAPER No. 20

B.—Statement showing the mileage made and the coal, oil and waste consumed by locomotives.

Also a summary of the principal work done in the locomotive and car shops at Moncton, Richmond and Rivière du Loup.

During the year the following rolling stock was purchased on capital and on revenue accounts:—

On capital account to increase the equipment :—

22 locomotives—Consolidation type.

4 locomotives—Pacific type.

3 locomotives—Switching.

10 Second-class sleeping cars.

4 express and baggage cars.

24 box cars—80,000 capacity.

448 box cars—60,000 capacity.

4 refrigerator cars—60,000 capacity.

100 steel side dump cars—100,000 capacity.

4 steam cranes.

On revenue account to replace cars destroyed :—

1 express and baggage car.

2 refrigerator cars—60,000 capacity.

38 hopper cars—30,000 capacity.

The two refrigerator cars replaced two of 34,000 capacity.

The thirty-eight hopper cars replaced the same number of small hoppers of 12,000 and 16,000 capacity.

The following rolling stock was built in the shops at Moncton on capital account to increase the equipment :—

1 milk car—(Classed as a baggage).

2 auxiliary cars.

The following rolling stock was rebuilt in the shops at Moncton on revenue account to replace the same number condemned :—

1 postal car, 3 box cars, 27 platform cars, 2 hopper cars—30,000 capacity.

132 box cars were fitted with end doors for loading rails, making 832 cars so fitted in the shops to the end of March, 1909.

996 box cars were fitted with side ladders.

70 locomotives were fitted with 'Elvin' driving box lubricators.

602 triple valves for box cars were converted into the 'K' Triple type, so as to apply the brakes simultaneously.

The rolling stock has been maintained in efficient condition notwithstanding our crippled condition in regard to repair shops at Moncton.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) J. J. WALKER,

Mechanical Accountant.

G. R. JOUGHINS, Esq.,

Superintendent of Motive Power, I.C.R.,

Moncton, N.B.

9-10 EDWARD VII., A. 1910

INTERCOLONIAL RAILWAY—STATEMENT showing the number of Locomotives and the various classes of other Rolling Stock on the line, on March 31, 1908, and March 31, 1909.

	Locomotives.	First Class Sleeping Cars.	Second Class Sleeping Cars.	Parlor Cars.	Dining Cars.	First Class Passenger Cars.	Second Class Passenger Cars.	Postal and Smoking Cars.	Express and Baggage Cars.	Air Brake Instruction Car.	Steam Motor Cars.	Box Cars.	Refrigerator Cars.	Platform Cars.	Pulpwood Cars.	Oil Tank Cars.	Hopper Cars.	Gondola Cars (Coal).	Coal Cars (20 Ton).	Stock Cars.	Auxiliary and Tool Cars.	Convertible Dump Cars.	Steel, Side Dump Cars.	Vans.	Total Cars.	Common Snow Ploughs.	Wing Ploughs.	Rotary Steam Ploughs.	Double Track Ploughs.	Double End Ploughs.	Ploughs.	Total Ploughs and Planters.	Steam Cranes.	Ballast Plough Cars.
On hand serviceable and, repairing, March 31, 1908.....	382	41	38	9	9	132	95	33	59	1	4	6,575	138	3,068	50	25	1,123	14	456	147	21	200	...	117	12,355	53	20	2	2	1	25	103	8	2
To be replaced at March 31, 1908.....	3	2	...	...	...	6	4	1	...	...	...	49	2	22	...	...	76	3	15	1	...	...	...	2	184	...	...	...	...	...	...	...	...	...
Total equipment March 31, 1908.....	385	41	40	9	9	138	99	34	60	1	4	6,624	140	3,090	50	25	1,199	17	471	148	21	200	...	119	12,539	53	20	2	2	1	25	103	8	2
Purchased during the year on capital account.....	29	10	...	...	...	...	...	4	...	...	...	472	4	...	...	...	...	...	...	...	...	100	...	...	590	...	...	...	...	...	...	4	...	...
Built in the shops at Moncton on capital account.....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	3	...	...	...	...	...	...	...	...	...
Changed in shops, Moncton, from platform to oil tank.....	...	...	...	...	...	...	...	...	...	...	...	...	...	15	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total equipment at March 31, 1909.....	414	41	50	9	9	138	99	34	65	1	4	7,096	144	3,075	50	40	1,199	17	471	148	23	200	100	119	13,132	53	20	2	2	1	25	103	12	2
To be replaced at Mar. 31, 1908, as above	3	2	...	...	...	6	4	1	...	...	...	49	2	22	...	...	76	3	15	1	...	...	...	2	184	...	...	...	...	...	...	...	...	...
Condemned during the year 1908-9.....	2	...	...	...	...	...	2	1	...	...	...	43	1	40	...	...	33	4	10	1	...	...	...	1	136	...	...	...	...	...	...	1	...	...
Destroyed by fire at Carmel and Daventryville.....	...	...	...	...	...	...	...	...	...	...	...	76	...	6	...	...	...	...	...	1	...	...	...	...	83	...	...	...	...	...	...	...	...	...
Total condemned and destroyed March 31, 1909.....	5	2	...	...	...	6	6	2	1	...	...	168	3	68	...	...	109	7	25	3	...	...	3	403	...	...	...	...	...	...	...	1	...	...
Replaced during the year 1908-9.....	...	...	...	...	...	...	...	1	...	...	...	3	2	27	...	...	40	...	...	...	...	...	...	...	74	...	...	...	...	...	...	...	...	...
To be replaced at March 31, 1909.....	5	2	...	...	...	6	6	1	...	...	...	165	1	41	...	...	69	7	25	3	...	...	...	3	329	...	...	...	...	...	...	1	...	...
Add serviceable and repairing above.....	409	41	48	9	9	132	93	33	65	1	4	6,931	143	3,034	50	40	1,130	10	446	145	23	200	100	116	12,803	52	20	2	2	1	25	102	12	2
Total equipment at March 31, 1909, as above.....	411	41	50	9	9	138	99	34	65	1	4	7,096	144	3,075	50	40	1,199	17	471	148	23	200	100	119	13,132	53	20	2	2	1	25	103	12	2

MONCTON, N.B., March 31, 1909. J. J. WALKER, Mechanical Accountant.

SESSIONAL PAPER No. 20

INTERCOLONIAL RAILWAY.

STATEMENT of Mileage made, also Coal, Oil and Waste consumed by Locomotives for year ended March 31, 1909.

MONTHS.	Locomotive Mileage.	CONSUMPTION.				AVERAGE CONSUMPTION PER 100 MILES			
		Tons of Coal.	Pints of Valve Oil.	Pints of Engine Oil.	Pounds of Waste.	Pounds of Coal.	Pints of Valve Oil.	Pints of Engine Oil.	Pounds of Waste.
1908.									
April.	802,307	45,811	10,513	23,429	18,844	12,790	1·31	2·91	2·35
May.	741,578	36,701	10,147	22,316	18,908	11,086	1·37	3·01	2·55
June.	737,168	35,853	9,769	22,373	17,919	10,894	1·33	3·03	2·43
July.	822,960	37,390	10,819	25,773	19,267	10,177	1·31	3·13	2·34
August.	825,133	38,819	11,101	25,365	19,474	10,538	1·35	3·07	2·36
September.	790,018	38,179	10,457	23,256	17,686	10,825	1·32	2·94	2·11
October.	793,888	39,447	10,611	28,204	17,716	11,130	1·34	3·53	2·23
November.	751,215	41,573	10,058	21,453	17,949	12,396	1·34	2·86	2·39
December.	765,295	44,386	10,379	21,093	18,117	12,992	1·36	2·76	2·37
1909.									
January.	698,471	40,155	9,354	20,023	16,817	12,878	1·34	2·87	2·41
February.	671,378	41,661	9,285	19,018	15,286	13,900	1·38	2·82	2·28
March.	805,967	48,933	10,935	22,953	17,034	13,600	1·36	2·85	2·11
Totals.	9,205,378	488,908	123,428	275,256	215,017	11,897	1·34	2·99	2·33

E. & O. E.,
 MONCTON, N.B.,
 March 31, 1909.

J. J. WALKER,
Mechanical Accountant.

The following is a report of the work done in the locomotive department at Moncton during the year.

Erecting shop—

- 100 locomotives received general repairs.
- 19 locomotives received heavy repairs.
- 21 locomotives received light repairs.

Boiler shop—

- 1 new boiler was built.
- 26 side sheets were made.
- 22 tube sheets were made.
- 13 door sheets were made.
- 64 fire boxes were patched.
- 3,350 new tubes were applied.
- 24,985 tubes were pieced.
- 117 boilers were tested.
- 250 new smoke stacks were made.
- 1 new ash pan was made.
- 96 ash pans were repaired.
- 32 new front ends were made.
- 61 Sterlingworth trucks were rebuilt.
- 43,025 stay bolts were applied.
- 144 tender tanks were repaired.

9-10 EDWARD VII., A. 1910

- 46 smoke stacks and bonnets for round houses were made.
- 10 tanks were built.
- 2 coal buckets were made.
- 12 ash pit buckets were made.
- 8 water service boilers were repaired.
- 500 oil box covers were made.
- 40 tender frames were repaired.
- 7 reservoirs were repaired.
- 1 steel cab was built.
- 2 paint tanks were built.
- 5 tenders were raised to increase the capacity.
- 5 motor supports were made.
- 2 exhaust pipes were made.
- 8 driving wheels were riveted.
- 2 vestibule car frames were riveted.
- 2 coal chutes were made.
- 24 hoods for blacksmith were made.
- 24 aprons for ballast cars were made.
- 2 steel car frames were riveted.
- 62,453 copper ferrules were made.

Blacksmith shop—

The following was the output of this shop—

- 2,200,147 lbs iron forgings, including 667,782 lbs. bolts.
- 607,065 lbs. steel forgings.

Brass foundry—

The foundry was the output of this shop—

- 361,058 lbs. bearings.
- 63,626 lbs. brass castings.
- 30,781 lbs. antimonial lead.
- 18,767 lbs babbit.
- 400 metallic packing.

Pattern shop—

The following patterns were made and repaired—

- 547 for cast iron.
- 126 for steel and malleable.
- 449 for brass castings.
- 133 repaired for cast iron.
- 148 repaired for steel and malleable.
- 173 repaired for brass castings.
- 40 altered for cast iron.
- 5 altered for steel castings.
- 288 altered for brass eastings.

Machine shop—

- 258 driving tires were applied.
- 99 engine truck tires were applied.
- 139 tender truck tires were applied.
- 471 ear wheel tires were applied.
- 652 driving tires were turned off.
- 258 engine truck tires were turned off.
- 518 tender truck tires were turned off.
- 620 ear tires were turned off.
- 75 engine truck axles were turned and fitted.

SESSIONAL PAPER No. 20

- 83 tender truck axles were turned and fitted.
- 233 tender truck tires were bored and fitted.
- 183 engine truck tires were bored and fitted.
- 534 car tires were bored and fitted.
- 24 car wheels were bored and fitted.
- 66 tender wheels were bored and fitted.
- 10 engine truck wheels were bored and fitted.
- 16 driving axles were applied.
- 12 driving wheel centres were machined.
- 92 tender wheels were fitted to axles.
- 84 engine truck wheels were fitted to axles.
- 33 new crank pins were made.
- 16 cheek plates were applied.
- 3 piston heads and rods were turned up.
- 2 tools for hexagon nuts were made.
- 36 smoke box doors and rings were made.
- 10,705 engine studs were turned.
- 15,890 stay bolts were threaded.
- 262,000 lbs. nuts were tapped.
- 665,300 other bolts were threaded.
- 1,000 turned bolts were threaded.
- 12 Knowles pumps were repaired.
- 1,500 lbs. nuts were retapped.
- 2 air cylinders were made.
- 3 sets driving wedges were made.
- 6 new cylinder heads were made.
- 6 new pistons were made.
- 4 new rings were made.
- 8 driving boxes were retabbitted.
- 5 new dies were made.
- 56,000 faced nuts were made.
- 6,000 engine bolts and studs were made.
- 6,000 patch bolts were made.
- 2,000 cylinder studs were made.
- 1,000 Westinghouse air-brake pins were made.
- 800 rings piston packing were made.
- 500 oil cups screws were made.
- 500 Westinghouse air-brake bolts were made.
- 400 wedge bolts were made.
- 24 guide bars were made.
- 20 cross heads were made.
- 12 cylinders and half saddles were made.
- 400 tube plugs were made.
- 300 hose bag springs were made.

In addition to the above a large number of miscellaneous articles were made and repaired, including : motion plates, cross heads, swing castings for engine trucks, large bolts, nozzles, valve tanks, fulcrums, trucks bolsters, foot plates, clutch wheels, cog wheels, guide blocks, &c.

The gas compressors at the electric light plant were overhauled and repaired.

Three motor car engines received general repairs.

Motion shop—

- 200 knuckle joints were made.
- 106 new brasses were fitted.
- 298 driving box brasses were relined.

9-10 EDWARD VII., A. 1910

- 64 rocker bushes were bored and turned.
- 4 big end brasses were stripped and cored.
- 119 big end brasses were bored, turned and fitted to straps.
- 272 small end brasses were bored.
- 58 main rod brasses were patched, bored out and fitted.
- 265 big end liners were planed.
- 224 cheek plates were bored out and fitted.
- 801 side rod bushes were machined.
- 242 knuckle joint bushes were bored out and fitted.
- 505 driving boxes were bored out and fitted.
- 504 eccentric straps and pulleys were repaired.
- 574 big end bolts were made.
- 360 eccentric rods were examined and repaired.
- 254 knuckle joint pins were turned.
- 276 knuckle joint nuts were made.
- 194 crank pins were examined and repaired.
- 184 rod bolts were turned and fitted.
- 194 cross head pins were fitted.
- 188 links were repaired.
- 163 reverse shaft bushes were renewed.
- 144 big end keys were made.
- 137 valves were planed and yokes fitted.
- 129 throttle levers were repaired and pins fitted.
- 125 reverse shafts were repaired and bushed.
- 130 valve rods were repaired and bushed.
- 122 cross heads were repaired, babbitted and keys fitted.
- 104 rocker arms were repaired and bushed.
- 512 copper rivets were made.
- 139 link hangers were overhauled.
- 137 driving axle boxes were made.
- 101 valves were packed.
- 93 rocker boxes bushed.
- 88 piston rods were made.
- 88 valve yokes were turned up.
- 72 reverse levers were repaired.
- 78 cross heads were made.
- 54 crank pin nuts were made.
- 56 main rods were repaired.
- 32 side rods were repaired.
- 51 cross-head pins were trued up.
- 18 blocks were fitted to links.
- 15 engine wheels were balanced and blocks fitted.
- 61 valve stems were made.
- 19 crank pin caps were turned up and fitted.
- 83 crank pin washers were made.
- 56 balance blocks were made.
- 74 crank pins were made.
- 60 wrist pin nuts were made.
- 60 transmission bars were made.
- 50 knuckle joint washers were made.
- 49 piston keys were made.
- 29 quadrants were made.
- 21 wrist pins were made.
- 26 reach rods were made.
- 14 division rings were made.

SESSIONAL PAPER No. 20

- 15 reversing lever pawls were made.
- 20 reversing lever fulcrums were made.
- 14 throttle glands were made.
- 2 guide yokes were made.
- 1 link saddle was turned.

Brass turning shop—

- 1,600 rings piston rod packing were made.
- 1,200 oil cups were made.
- 915 sets valve stem packings were made.
- 300 brake cam nuts were made.
- 200 brake cams were made.
- 200 engine truck bushes were made.
- 400 cylinder cock valves were made.
- 200 cylinder cocks were made.
- 200 grease plugs were made.
- 150 flag staff casings were made.
- 150 brake cam screws were made.
- 72 small tender cocks were made.
- 50 air brake pump packing rings were made.
- 48 gauge glass cocks were made.
- 48 try cocks were made.
- 24 injector check valves were made.
- 36 bell ringers were made.
- 24 steam chest release valves were made.
- 24 engine gongs were made.
- 24 steam chest nipples were made.
- 6 locomotive whistles were made.
- 6 blow-off cocks were made.
- 50 large tender cocks were made.
- 650 steam gauges were repaired.
- 202 hydraulic jacks were repaired.
- 223 injectors were repaired.
- 464 expander pins were made.
- 400 beading tools were made.
- 117 reamers were made.
- 358 taps were made.
- 127 lubricators were repaired.
- 67 sets tube expanders were made.
- 140 cutters were made.
- 92 heater regulators were made.
- 130 wheels defect gauges were made.
- 42 sets dies were made.
- 40 wind gates were made.
- 24 release valves were made.
- 24 electric headlights were repaired.
- 24 bottle jacks were repaired.
- 32 tube cutters were repaired.
- 20 copying presses were made.
- 20 air pumps were repaired.
- 16 electric headlight dynamos were repaired.
- 9 stay bolt taps were made.
- 9 three-way valves were made.
- 6 injectors were made.
- 5 sanders were made.

In addition to the above a large number of lubricators, heater regulators, engine

9-10 EDWARD VII., A. 1910

valves, pump governors, air pumps, brake cylinders, dies, air cylinders and boiler mountings received overhauling and repairs.

Tender shop—

- 600 cab curtains were made.
- 1,629 sledge hammer handles were made.
- 808 hammer and hatchet handles were made.
- 220 chisel and 63 monkey wrench handles were made.
- 229 boxes were made and 16 repaired.
- 81 aprons were made.
- 131 running boards were made.
- 110 sashes were made.
- 223 tenders were repaired.
- 98 cab cushions were made.
- 88 drivers' seats and 48 brakemen's seats were made.
- 70 drivers' outfit and tool boxes and 18 machinists' tool boxes were made.
- 5 drivers' outfit boxes were repaired.
- 62 headlight bottoms were made and 3 repaired.
- 95 switch lamp bottoms were made.
- 55 bolsters were made.
- 45 brake beams were made.
- 27 tender outfit boxes were made and 22 repaired.
- 30 buffer beams were made.
- 24 oil tank bottoms were made.
- 37 spring boards were made.
- 16 tender frames were made.
- 11 hand cars were made and 7 repaired.
- 8 hand trucks were made and 14 trucks repaired.
- 14 doors were made.
- 6 new cabs were made.
- 5 new wheelbarrows and 3 trolleys were made, and 48 wheelbarrows repaired.
- 34 wooden tender trucks were made.
- 95 mallets and 21 beams were made.
- 11 vice benches and 9 shop ladders were made.
- 3 pilots were made.

Tin and Copper shop—

- 13,200 W.A.B. hose couplings were fitted to new hose.
- 1,542 tin oil cup covers were made.
- 250 long spout funnels were made.
- 200 gauge glass shields were made
- 303 head lights were repaired.
- 14,059 bushes were lined.
- 667 switch lamps were repaired.
- 297 engine tail lamps were repaired.
- 98 signal lamps were repaired.
- 340 engine oilers were repaired.
- 214 oil cans were repaired.
- 206 water glass lamps and 138 steam gauge lamps were repaired.
- 159 tallow pots were repaired.
- 84 switch lamp fonts were repaired.
- 73 stovepipe joints were made, and 5 stovepipe elbows.
- 84 hand lamps were made.
- 116 water cans and 50 economy heaters were repaired.
- 50 sets art glass were altered.

SESSIONAL PAPER No. 20

- 40 circuit breakers and 32 delivery pipes were made.
- 19 smoke stacks for water service were repaired.
- 18 delivery pipes and 10 tank pipes were repaired.
- 9 oil tanks were repaired.
- 7 new electric signal lamps were made.
- 5 stove drums were made.

Steam and Westinghouse air-brake pipes were repaired on 117 locomotives.

Extensive remodelling and repairing was done to the plumbing work in the following buildings and stations: Chatham Junction, general offices, Moncton station, Moncton rest house, Moncton freight-shed, Moncton shops, Sussex station, Millerton station, Moncton yard office and government houses, Sackville, Newcastle, Rothesay and Hampton stations.

At Newcastle in the engine-house a hot water boiler was installed and a large amount of work was done on water and steam pipes for heating the rest-room, officers, work-shops and store-room.

All the steam-heating and water pipes in Moncton round-house were repaired and equipped with 3,000 feet of iron pipe, 40 large 'Globe' valves, 26 hook plates and 8 pipe benders were installed.

Sackville station was equipped with lead gutter pipes and conductor pipes.

A large quantity of new copper and steam pipes were supplied and installed in St. John elevator.

Stoves and pipes were fitted up and repaired in stations between Moncton and Ste. Flavie, St. John and Halifax, Truro and Sydney, and on the Canada Eastern Division and all branch lines between these points.

The car washing building at Moncton was equipped with steam-heating apparatus, including 7 radiators, steam traps and all necessary pipes and fittings, and hot and cold water was also installed.

Repairs were made to tables, wash basins, taps, ventilators, water closets, brass-work, &c., in the passenger cars that were repaired in the shops during the year.

Repairing and altering copper pipes, copper pumps, heater and blower pipes, steam chest covers, dome and cylinder covers, driving and truck boxes, and general repairs and alterations were made to all iron and air pipes, &c., and lagging was taken off, repaired and replaced on 124 locomotives.

The water service has been maintained in efficient condition over the whole line.

Car shops—

The following new cars were built :—

- 1 milk, 2 auxiliary.

The following cars were rebuilt :—

- 27 platform, 3 box, 1 postal, 2 15-ton hopper.

The following cars received heavy repairs :—

- 6 parlor, 21 sleeping, 5 dining, 12 colonist, 155 freight, 56 first-class, 6 postal, 1 auxiliary, 1 van, 1 air-brake instruction, 19 baggage, 34 second-class.

The following cars received light repairs :—

- 7 official, 38 sleeping, 7 dining, 30 colonist, 34 baggage, 70 first-class, 40 second-class, 9 postal, 2 vans, 8,839 freight.

The following cars were burnt off, painted and varnished :—

- 9 first-class, 4 second-class, 2 colonist, 1 postal, 2 baggage.

The following cars were painted and varnished :—

- 4 sleeping, 24 first-class, 31 second-class, 2 postal, 10 baggage, 1 colonist, 8 vans, 3 auxiliary.

9-10 EDWARD VII., A. 1910

The following cars were cleaned and varnished :—

8 sleeping, 2 parlor, 4 first-class, 1 motor, 1 colonist.

The following cars were painted inside and outside :—

7 vans.

The following cars were scraped, painted and varnished :—

3 dining, 1 sleeping, 11 first-class, 3 second-class, 3 postal, 5 baggage, 2 colonist.

The following cars were cleaned, painted and varnished :—

1 official, 9 sleeping, 5 first-class, 4 baggage, 8 colonist, 1 motor.

The following cars were cleaned, touched up and varnished :—

1 official, 2 sleeping, 3 dining, 1 parlor, 3 first-class, 5 postal, 7 baggage 2 colonist, 3 motor.

The following cars were painted and lettered :—

314 box, 169 platform, 2 refrigerator, 11 gondola, 9 vans, 9 hoppers, 15 tank.
4,658 new chilled wheels were bored and pressed on axles.
2,338 second-hand chilled wheels were bored and pressed on axles.
70 new steel wheels were bored and pressed on axles.
364 second-hand steel wheels were bored and pressed on axles.
3,406 steel tires were turned.
968 new axles were turned.
3,620 second-hand axles were turned.
8,501 wheels were taken off axles.

Special work was done as follows:—

133 engines and tenders were painted, varnished and lettered.
7 tenders were painted, varnished and lettered.
5 engines were painted, varnished and lettered.
14 baggage trucks were painted and lettered.
9 rest houses were painted and fitted up.
5 flangers were painted and lettered.
1 steam shovel, 1 engine cab and 5 snow ploughs were painted, inside and outside and lettered.
48 freight cars were fitted with straight air.
15 platform cars were fitted with oil tanks.
204 new wooden freight car trucks were built and applied.
113 freight cars were fitted with air-brakes.
3 shanties were fitted up and painted.
400 new truck bolsters were made.
1,000 new truck sides were made.
100 locomotive pilots were made.
100 truck spring boards were made.
500 car buffers were made.
1,000 brake beams were made.
1,000 car draft timbers were made.

A large number of articles were repaired during the year, such as: baggage and freight trucks, foot-boards, train rear end tool boxes, chairs, train safes, baggage sheds, ticket cases, stepladders, outfit boxes and settees.

In addition to the lumber prepared for repairs, &c., 600,000 feet was milled on store orders.

957 manufactured orders were completed and delivered to store.

In addition to the numerous articles made and repaired for this department at Moncton, a great deal of work was done for the maintenance and traffic departments, and also for other departments of the railway.

SESSIONAL PAPER No. 20

The following new machines were set up at the Moncton new shops :—

Blacksmith shop—

- 3 steam hammers were installed and equipped with air and steam.
- 4 trip hammers were installed and equipped with electric drives.
- 18 forges were installed and equipped with air, steam, &c.
- 8 gas-blowers were installed complete.
- 2 bolt headers.
- 1 tapper roll.
- 1 nut-making machine.
- 2 bulldozers.
- 1 shearing machine.

Turning shop—

- 1 100-inch wheel lathe.
- 1 'setters' double action lathe.
- 2 boring mill.
- 1 36-inch wheel lathe.
- 2 cold cutting off saws.
- 1 arch bar drill.
- 1 24-inch drill.
- 3 screwing machines.
- 1 quartering machine.
- 8 air reservoirs.
- 1 3-headed slotter.
- 1 36-inch and 1 48-inch planers.
- 1 6-spindle nut tapper.
- 1 3-headed bolt screwing machine.
- 1 double-headed screwing machine.
- 2 3-spindle nut tapping machines.
- 1 4-spindle stay bolt drills.
- 2 stud making machines.
- 1 36-inch engine lathe.
- 1 emery wheel.
- 2 slotters.
- 1 84-inch boring mill.
- 1 slab miller.
- 1 No. 2 milling machine.
- 1 universal grinder.
- 2 14-inch, 1 10-inch and 1 20-inch lathes.
- 1 universal miller cutter grinder.
- 1 lathe tool grinder.
- 2 shapers.
- 1 No. 3 milling machine.
- 1 centering machine.
- 1 20-inch drill.
- 11 groups shafting and pulleys complete.
- 11 motors in connection with shafting and pulleys.
- 1 apparatus for nut solution.

Boiler shop—

- 1 erecting crane and 1 plate planer.
- 1 pump.
- 1 bending shears.
- 1 bull riveter and platform.

9-10 EDWARD VII., A. 1910

Tender shop—

- 1 buzz planer.
- 1 rip-saw and 1 cut-off saw.
- 1 hollow mortiser with boring attachment.
- 1 double spindle.

Cabinet shop—

- 1 cut-off and 1 jig saw.
- 2 rip-saws.
- 2 buzz planers and 1 Oliver planer.
- 1 heavy planer.
- 1 band re-saw.
- 1 variety moulder and 2 mortising machines.
- 1 3-drive sand-papering machine.
- 1 3-spindle boring machine.
- 1 door machine.

Planing mill—

- 5 groups of shafting and 1 timber sizer.
- 2 matchers.
- 3 cut-off saws.
- 3 rip-saws and 1 hand-saw.
- 1 timber dresser and 1 emery wheel.
- 1 3-spindle boring machine.
- 2 buzz planers.
- 1 combination mortising machine.
- 1 wood slotter and 1 tenoning machine.

Power house—

- 3 feed pumps and 1 fire pump.
- 1 air compressor.
- 2 large gas engines.
- 29,846 feet of black iron pipe with fittings, 5,839 feet of galvanized pipe with fittings, and 2,133 feet extra heavy pipe with fittings were put in the different shops.

A large amount of work was also done in putting in small offices, benches, racks, counters, tables, tanks, lockers, brackets, &c.

The following work was done in the shops at Richmond—

- 12 locomotives received heavy, 1 medium and 135 specific repairs.
- 9 boilers were re-tubed.
- 38 boilers were tested.
- 13 fire boxes were patched.
- 1 set driving wheels was re-tired.
- 14 sets driving tires were turned off.
- 36 pairs of engine truck tires were turned off.
- 376 tender truck and car tires were turned off.
- 12 pairs of new tender truck wheels were applied.
- 4 crank pins were made.
- 3 new tender frames were made.
- 17,310 bolts were forged.
- 53,750 bolts were screwed.
- 3,200 studs were screwed.
- 13 engines and tenders were painted.
- 190 sets metallic piston rod packing were made.
- 235 sets metallic valve stem packing were made.

SESSIONAL PAPER No. 20

In the car repair shop a large number of freight and passenger cars received quite extensive repairs.

A lot of work was also done during the year for the maintenance and traffic departments, and also for other departments of the railway.

The following new machine was received and set up:—

1 centering machine.

The following work was done in the shops at Rivière du Loup—

14 locomotives received general, 8 medium and 42 specific repairs.

15 boilers were re-tubed and 12 partly re-tubed.

10 fire boxes were patched.

66 boilers were tested.

51 driving tires were turned off.

42 engine truck tires were turned off.

223 tender truck tires were turned off.

43 pilots were made.

8,640 bolts were forged.

52,050 bolts were screwed.

3,557 studs were screwed.

1,225 nuts were tapped.

21 engines and tenders were painted.

31,435 lbs. brass castings were machined.

257 sets metallic piston rod packing were made.

76 sets metallic valve stem packing were made.

134,067 lbs. iron forgings were made.

A large number of freight and passenger cars received light repairs during the year in addition to the above regular work.

A large amount of work was done for the maintenance and traffic departments during the year.

No. 1.—INTERCOLONIAL RAILWAY.
CAPITAL ACCOUNT, YEAR ENDED MARCH 31, 1909.

1908.	DR.	\$	cts.	\$	cts.	1908.	Cr.	\$	cts.
March 31	For cost of Intercolonial Ry. to date ..			87,127,431	90	March 31	By Dominion of Canada.....	87,127,431	90
	Strengthen bridges.....	131,534	72						
	Put railway between Indian town and Blackville into condition for operation.....	79,996	73						
	Increased accommodation at Halifax.	499,973	25						
	Improvements at Amherst.....	27,211	01						
	Rolling stock.....	1,353,646	18						
	Stellarton, increased accommodation.	13,316	20						
	Engine house and machine shop at Rivière du Loup.....	112,246	31						
	Engine house, &c., Chaudière Jet.....	40,078	39						
	Improvements at Campbellton.....	18,819	97						
	Improvements at Ste. Rosalie.....	34,072	87						
	Increased accommodation at St. John	99,324	96						
	Locomotive and car shops with equipment.....	569,994	56						
	Towards double-tracking parts of line	199,775	29						
	Increased accommodation at Truro ..	104,947	48						
	Improvements at Newcastle.....	37,721	56						
	Dalhousie, extension of wharf	3,000	00						
	Increased accommodation and facilities along the line.....	176,955	30						
	Increased water supply.....	29,400	72						
	Improvements at Windsor	21	10						
	New machinery for locomotive and car shops	154,497	06						
	Increased accommodation at Ste. Flavie.....	18,311	04						
	Extension to Sydney Mines.....	4,056	06						
	Increased accommodation at Pictou.	1,839	04						
	Increased accommodation at Sydney.	13,398	76						
	Improvements at Mulgrave.....	28,490	65						
	Pintsch gas apparatus.....	1,575	44						
	New turntables.....	2,369	59						
	Improvements at Sackville.....	26,985	46						
	Improvements at Loggreville.....	413	34						
	Increased accommodation at New Glasgow.....	8,780	65						
	Increased accommodation at Springhill Junction.....	1,647	12						

SESSIONAL PAPER No. 20

	1907	1909.	By Dominion of Canada.	3,867,232 16	90,994,664 06
Increased accommodation at Lévis.					
Increased accommodation at Antigonish.	4,500 00				
Original construction.	365 16				
Division of line at Chatham and branch to wharf.	4,539 85				
Improvements at Drummondville.	4,234 60				
Division of line at Sydney Mines to River George.	5,504 72				
Subway at Avondale.	6,778 67				
Air brakes to freight cars.	2,104 30				
Provide for survey to ascertain the best route for an additional line from Moncton or Amherst to a point at or near Truro.	9,951 74				
Picote Harbour water service.	83 70				
Petit Rocher, spur line to wharf.	15,000 00				
Side ladders on box cars.	6,604 70				
Air brake equipment.	10,500 00				
Provide 100-ton track scale at Aston Junction.	2,215 02				
Improvements at North Sydney.	342 82				
		1909.	March 31	3,867,232 16	90,994,664 06

E. & O. E.
MONCTON, N.B.

S. L. SHANNON,
Comptroller

9-10 EDWARD VII., A. 1910

No. 2.—INTERCOLONIAL RAILWAY.

REVENUE ACCOUNT, YEAR ENDED MARCH 31, 1909.

Expenditure.	§ cts.	Earnings.	§ cts.
Maintenance of way and structures..	1,771,396 73	Passenger earnings.....	2,628,218 57
Maintenance of equipment..	2,096,491 97	Freight earnings.....	5,502,550 58
Traffic expenses.....	186,749 69	Mail and express earnings.....	350,478 58
Transportation expenses.....	5,046,086 32	Miscellaneous earnings.....	45,821 73
General expenses.....	227,296 84		
	9,328,021 55		8,527,069 46
		Balance.....	800,952 09
	9,328,021 55		9,328,021 55

E. & O. E.,
MONCTON, N.B.

S. L. SHANNON,
Comptroller.

No. 3.—INTERCOLONIAL RAILWAY.

MAINTENANCE of Way and Structures, year ended March 31, 1909.

	§ cts.
No. 1. Superintendence.....	47,062 10
2. Ballast.....	35,656 22
3. Ties.....	316,449 62
4. Rails.....	77,892 17
5. Other track material.....	120,264 16
6. Roadway and track.....	577,405 56
7. Removal of snow, sand and ice.....	134,434 19
8. Tunnels.....	64 00
9. Bridges, trestles and culverts.....	53,484 54
10. Over and under grade crossings.....	1,569 30
11. Grade crossings, fences, cattle-guards and signs.....	62,396 15
12. Snow and sand fences and snow sheds.....	12,678 80
13. Signals and interlocking planks.....	6,495 46
14. Telegraph and telephone lines.....	1,618 16
16. Buildings, fixtures and grounds.....	180,557 78
17. Docks and wharfs.....	22,689 08
18. Roadway tools and supplies.....	23,672 26
19. Work equipment repairs.....	24,644 86
22. Injuries to persons.....	426 03
23. Stationery and printing.....	4,331 42
25. Other expenses.....	852 63
26. Maintaining joint tracks, yards and other facilities Dr.....	75,487 81
Special vote—Compassionate allowance to Angus McGillivray.....	1,000 00
	CR.
27. Maintaining joint tracks, yards and other facilities.....	1,780,931 83
	9,535 10
Total.....	1,771,396 73

E. and O. E.,
MONCTON, N. B.

S. L. SHANNON,
Comptroller.

SESSIONAL PAPER No. 20

No. 4.—INTERCOLONIAL RAILWAY.

MAINTENANCE of Equipment, year ended March 31, 1909.

	\$	cts.
No. 28. Superintendence	55,671	57
29. Steam locomotives—Repairs	762,171	48
30. " Renewals	135,411	82
35. Passenger train cars—Repairs	272,787	27
36. " Renewals	67,705	85
38. Freight train cars—Repairs	602,065	29
39. " Renewals	100,000	08
44. Floating equipment—Repairs	8,100	82
47. Shop machinery and tools	43,188	63
49. Injuries to persons	374	55
50. Stationery and printing	10,696	61
51. Maintaining joint equipment at terminals—Dr	2,158	19
52. Other expenses	36,159	81
Total	2,096,491	97

E. and O. E.,
MONCTON, N. B.S. L. SHANNON,
Comptroller.

No. 5.—INTERCOLONIAL RAILWAY.

TRAFFIC Expenses, year ended March 31, 1909.

	\$	cts.
No. 57. Superintendence	51,325	95
58. Outside agencies	59,340	25
59. Advertising	49,009	23
60. Stationery and printing	24,936	67
61. Traffic Associations	2,137	59
Total	186,749	69

E. & O. E.,
MONCTON, N. B.S. L. SHANNON,
Comptroller.

9-10 EDWARD VII., A. 1910

No. 6.—INTERCOLONIAL RAILWAY.

TRANSPORTATION Expenses, year ended March 31, 1909.

	\$	cts.
No. 66. Superintendence.....	79,055	26
67. Despatching trains.....	158,437	60
68. Station employees.....	649,156	77
69. Weighing and Car Service Associations.....	2,166	07
70. Stock yard and grain elevators.....	12,858	54
72. Station supplies and expenses.....	100,817	68
73. Yardmasters and their clerks.....	39,650	78
74. Yard conductors and brakemen.....	128,853	82
75. Yard switch and signal tenders.....	11,021	57
76. Yard supplies and expenses.....	13,897	00
77. Yard enginemen.....	113,637	86
78. Engine house expenses—Yard.....	27,434	59
79. Fuel for yard locomotives.....	176,915	40
80. Water for yard locomotives.....	9,749	36
81. Lubricants for yard locomotives.....	3,877	95
82. Other supplies for yard locomotives.....	2,208	07
83. Operating joint yards and terminals—Dr.....	101,843	44
86. Road enginemen.....	491,628	96
87. Enginehouse expenses—Road.....	252,947	41
88. Fuel for road locomotives.....	1,547,331	58
89. Water for road locomotives.....	49,501	94
90. Lubricants for road locomotives.....	24,832	75
91. Other supplies for road locomotives.....	16,268	20
94. Road trainmen.....	647,722	56
95. Train supplies and expenses.....	192,592	66
96. Interlockers, blocks and other signals—Operation.....	14,475	88
97. Crossing flagmen and gatemen.....	12,761	45
98. Drawbridge operation.....	3,752	72
99. Clearing wrecks.....	22,931	92
100. Telegraph and telephone—Operation.....	7,425	23
101. Operating floating equipment.....	41,905	82
103. Stationery and printing.....	58,941	81
105. Other expenses.....	22,814	00
106. Loss and damage—Freight.....	32,299	36
107. " " Baggage.....	429	49
108. Damage to property.....	4,165	95
109. Damage to stock on right-of-way.....	2,691	54
110. Injuries to persons.....	21,908	74
111. Operating joint tracks—Dr.....	13,513	86
Special Vote—Compassionate allowance to Mrs. Achille Rheault.....	1,000	00
" " Gratuity to Mrs. G. M. Jarvis.....	416	66
Total.....	5,115,842	25
Cr.		
No. 84. Operating joint yards and terminals—Cr.....	69,755	93
	5,046,086	32

E. and O. E.,
MONCTON, N. B.S. L. SHANNON,
Comptroller.

No. 7.—INTERCOLONIAL RAILWAY.

GENERAL Expenses, year ended March 31, 1909.

	\$	cts.
No. 113 Salaries and expenses of general officers.....	16,552	17
114. " " clerks and attendants.....	100,350	30
115. General office supplies and expenses.....	4,092	16
116. Law expenses.....	10,365	41
118. Relief department expenses.....	8,000	00
119. Pensions.....	71,122	64
120. Stationery and printing.....	13,078	45
121. Other expenses.....	3,534	05
Special Vote—Gratuity to Mrs. J. W. Wallace.....	201	66
Total.....	227,296	84

E. and O. E.,
MONCTON, N. B.(Sgd.) S. L. SHANNON,
Comptroller.

SESSIONAL PAPER No. 20

No. 8.—INTERCOLONIAL RAILWAY.

GENERAL STORES ACCOUNT, YEAR ENDED MARCH 31, 1909.

Dr.	\$	cts.	\$	cts.	Cr.	\$	cts.	\$	cts.
To Balance at March 31, 1908					By Issues during year ended March 31, 1909.....	4,075,351	30		
Purchases during year ended March 31, 1909..	4,078,735	82			Sales, material, fuel, &c	37,618	72		
Charges from other departments	297,143	01			Sales old material	219,931	43		
Labour, &c.	187,197	45						4,332,901	46
Staff pay rolls	2,683	60			Balance—				
					Ordinary stores, including fuel	988,817	62		
					Roadway and bridge material	610,276	97		
								1,599,091	59
								5,931,996	05

E. & O. E.,
MONCTON, N.B.,(Sgd.) C. F. BURNS,
Auditor of Disbursements.

(Sgd.)

S. L. SHANNON,
Comptroller and Treasurer.

No. 9.—INTERCOLONIAL RAILWAY.
GENERAL BALANCE, YEAR ENDED MARCH 31, 1909.

Dr.		Cr.	
	\$ cts.		\$ cts.
10 Cash.....		By Dominion of Canada.....	
Station agents.....		Unclaimed freight.....	2,403,811 90
General stores.....		Intercolonial and Prince Edward Island Rail- ways employees Provident Fund.....	308 21
Receiver General—Provident Fund Account.....		Suspense.....	219,076 07
Auditor's Suspense Account.....		Equipment Renewal Account.....	3,513 50
Cash In Transit Account.....			207,262 20
Commissary Stock.....			
Freight in Transit Account.....		By Individuals and Companies Ledger—	
Expenditures for Road and Equipment Sus- pense.....		Atcheson, Topeka and Santa Fe Ry.....	6 88
		Amherst Malleable Iron Co.....	40 42
		Alderie Beggs.....	55 00
To Individuals and Companies Ledger—		Cape Breton Ry.....	0 80
Acadia Coal Co.....	424 22	Chatham Ry.....	0 07
Armour Car Lines.....	14 41	Chappell Bros.....	332 60
American Locomotive Co.....	1,083 97	Campbell McLaurin Lumber Co.....	217 53
H. & A. Allan.....	68 85	Department of Justice.....	1,000 00
Allan Steamship Line.....	1,892 13	Dubs & Co.....	98 63
Athol Station.....	4 44	Dominion Bridge Co.....	17 37
Amherst Freight Station.....	3 31	G. Deiners.....	73 00
T. Atkinson.....	49 87	Wm. B. Dickson.....	35 50
H. Atkinson.....	12 80	G. Dumont.....	150 00
Albert Manufacturing Co.....	1,231 51	Elmsdale Co.....	1,190 18
Atlantic and Lake Superior Ry.....	6,069 43	Freight Claim Agent.....	195 69
Amherst Ticket Station.....	18 75	T. E. Ferriault & Co.....	251 00
Steamship Amelia.....	0 70	Grand Lake Lumber Co.....	383 00
Boston and Maine Ry.....	237 06	General Storekeeper.....	562 19
Balliston Terminal Ry.....	395 41	H. J. Carson & Co.....	977 34
Baltimore and Ohio Ry.....	3 47	Hampton and St. Martin's Ry.....	501 28
Baldwin Locomotive Works.....	181 19	Intercolonial Ry. Employees' Relief & Insurance Association.....	
M. Beatty & Sons.....	1 14	Imperial Oil Co.....	11 47
J. C. Brown.....	15 00	J. Lord.....	17 71
Boisdale Station.....	7 80	W. S. Loggie & Co.....	190 00
Big Station.....	22 00	Joseph LeCour.....	127 00
Bangor & Arnscook Ry.....	25 21	Lonison Lumber Co.....	753 55
E. Bigney.....	0 79	L. M. Langlais.....	118 00
Buffalo & Susquehanna Ry.....	25 86	Nap. Mercer.....	0 02
Builders Wood Working Co.....	0 42	George McSweeney.....	98 50
C. F. Burns.....	12 85	W. A. McKay & Co.....	25 00
Barthurst Lumber Co.....	3 50	McKay Mining Co.....	138 00
Canadian Pacific Ry. Rolling Stock.....	328 55	Nova Scotia Fertilizer Co.....	931 50
F. E. Came.....	22,446 90	New Brunswick Telephone Co.....	112 61
	2,760 70		27 62

SESSIONAL PAPER No. 20

Canada Eastern Ry.	17 42	J. O'Shaughnessy	37 12
Canacut Ry.	21,799 47	Portland Rolling Mills... ..	0 01
Canadian Express Co.	26 75	H. C. Philbrick	0 01
Canada Coals & Ry. Co.	317 84	Jas. R. Porter	262 50
Canadian Pacific Ry.	816,170 30	N. Piché & Fils	1,136 94
" (N. B. Div.)	4,860 36	Alphonse Pineau	352 95
Charlottetown Steam Navigation Co.	21,030 66	Quebec Construction Co.	51 44
Central Vermont Ry.	2 90	Rhodes, Curry & Co.	496 89
Canada Atlantic Ry.	1,128 03	Robt. Relford & Co.	7 37
Canada Atlantic Ry. & Coal Co.	2 59	Edward Ruel & Co.	326 00
Cumberland Ry. & Coal Co.	5,420 49	Sassenwein Bros.	2 73
Canada Iron & Foundry Co.	5,338 93	J. Simon	2,190 88
Canadian Northern Ry.	1,978 77	James W. Smith	255 21
Cincinnati, Hamilton & Dayton Ry.	17 86	Sluvis Lumber Co.	3 00
Cleveland, Cincinnati, Chicago & St. Louis Ry.	2 78	B. L. Tucker	320 69
Chicago, Milwaukee & St. Paul Ry.	1 63	Vanderbeck & Sons	232 00
S. Cunard & Co.	305 28	S. E. Vaughan & Co.	1,136 00
T. B. Cullum	5 00	Alex. Watson	336 00
Canadian Bridge Co.	21 00	M. Wood & Sons	150 00
G. S. Campbell & Co.	22 80		
Campbellton Ticket Station	94 85	By Individuals and Companies Ledger Suspense—	
Campbellton Freight Station	666 95	Acadia Coal Co.	140 45
H. A. Cameron	1,679 07	Albert Manufacturing Co.	1,231 51
Coldbrook Rolling Mills	1,967 41	Corbett, Floesch Co.	13 50
Coal Branch Station	65 54	H. J. Garson & Co.	3,127 32
T. Cook & Son	19 80	J. Hillis & Son	105 60
Chicago & Alton Ry.	20 50	Intercolonial Coal Mining Co.	183 50
Cincinnati, New Orleans & Texas Ry.	185 50	Moncton and Bostouche Ry.	36 00
Y. C. Campbell	1 00	New Brunswick Coal and Ry. Co.	20 50
Chicago, Burlington & Quincy Ry.	10 81	Prince Edward Island Ry.	253 69
Central Ry. of New Jersey	10 25	Rhodes Curry & Co.	2,545 36
Chesapeake & Ohio Ry.	4 60		
Canadian Oil Co.	2 07	By Traffic Ledger:—	
Canadian Oil Refining Co.	5 42	Atchafson, Topeka and Santa Fe Ry.	343 89
Chicago, Cincinnati & Louisville Ry.	1 20	Boston & Maine Ry.	3,917 32
Caldwell Coal & Ry. Co.	326 85	Canadian Northern Ry.	438 16
Chicago, Rock Island and Pacific Ry.	6 23	Canada Atlantic and Plant Line	128 70
Consolidated Coal Co.	0 01	Canadian Pacific Railway	30,538 60
Chicago Great Western Ry.	3 08	Central Vermont Railway	1,940 99
Corbett & Floesch	2,791 26	Chicago, Rock Island, and Pacific Ry.	476 38
Copper Crown Co.	45 13	Chicago, Burlington and Quincy Ry.	241 34
Thomas Cote	5 24	Chicago and North Western Railway	809 46
Canada Foundry Co.	21 98	Chicago, Milwaukee and St. Paul Ry.	442 03
City of St. John	11 80	Duluth South Shore and Atlantic Ry.	2,048 91
Dept. of Agriculture	0 08	Dominion Atlantic Ry.	85 65
Dominion Tar and Chemical Co.	41 70	Eastern S. S. Co.	220 75
Dept. of Public Works	15,236 24	Piscatawa and Lake Superior Ry.	0 25
Dept. of Marine and Fisheries	152 24	Great Northern Ry. Line	423 67
Carried forward	2,106,198 23		
		Carried forward	7,659 43
			2,857,586 84

SESSIONAL PAPER No. 20

Halifax Station-Labour:	4,413 70			
J. Hillis & Son	105 60			
M. J. Hancu	187 89			
Halifax Freight Station	887 49			
E. Hamilton	1,131 52			
H. M. Hamilton	316 66			
Halifax and Cape Breton Ry.	1,151 42			
L. R. Harrison	1,343 41			
W. Hood & Son	132 00			
Humphreys Glass Works	57 00			
Inverness Ry. and Coal Co.	2,209 61			
Intercolonial Coal Mining Co.	355 04			
Interprovincial Navigation Co.	3 16			
Illinois Central Ry.	18 26			
Iona Station	72 71			
Isle Verte Station	25 00			
International and Great Northern Ry.	1 22			
Intercolonial and Prince Edward Island Railways Employees' Provident Fund	223 57			
Kent Northern Ry.	8,385 84			
Kent Junction Station	28 38			
Kansas City and Southern Ry.	8 31			
Londonderry Iron and Mining Co.	20,559 38			
Lehigh Valley Ry.	4 63			
Louisville and Nashville Ry.	10 37			
Lake Shore and Michigan Southern Ry.	15 13			
LeB. Drury Lockhart	45 50			
Albert Laine	336 00			
Lochniere Lumber Co.	3 25			
La Cie de Nav. Canada	2 00			
Moncton and Buctouche Ry.	436 45			
Michigan Central Ry.	6 90			
Maine Central Ry.	17 45			
Moncton Freight Station	20 00			
Monrovia Station	7 54			
Montreal Cotton and Wool Waste Co.	43 20			
Montmagny Light and Pulp Co.	756 09			
T. Macdon	2,087 63			
Midland Ry. of N.S.	7 07			
Morchaux' Despatch Transportation Co.	4 82			
Missouri Pacific Ry.	9 93			
Minneapolis, St. Paul and Sault Ste. Marie Ry.	0 89			
Maritime Coal and Ry. Co.	7,501 38			
Montreal Steel Works	705 97			
Musgrave & Co.	9 72			
Mathie, Ellis & Co.	26 28			
Maritime Engineering Co.	2 40			
Mobile and Ohio Ry.	1 13			
Carried forward	2,166,198 23			
H. A. Patton				
J. Cameron	1 00			
Stephen McNeil	0 25			
Canadian Express Co.	1 00			
John Fenderson & Co.	35 00			
Dartmouth Ferry Commission	1 00			
By advances:				
C. Surette	10 00			
Carried forward	753 40			
Carried forward	10 00			
Carried forward	2,913,281 76			

No. 8.—INTERCOLONIAL RAILWAY—Continued.
GENERAL BALANCE, YEAR ENDED MARCH 31, 1909—Continued.

Dr.	\$	cts.	\$	cts.	Cr.	\$	cts.
Brought forward			2,166,198	23	Brought forward		
To							2,913,284 76
Marsh & Marsh		3 90					
H. W. Monsell & Co.		18 08					
Maine Steamship Co.		44 00					
Matapedia Station.		480 16					
McLean, Holt & Co.		554 00					
H. J. McManus.		8,324 42					
A. R. McDonald.		2 76					
J. J. McLeod.		644 16					
G. McDougall & Co.		1,466 00					
H. F. McDougall.		8 46					
J. W. McManus Co., Ltd.		6,889 59					
W. P. McNeil & Co.		101 48					
New Brunswick Coal and Ry. Co.		58,074 69					
New York Central and Hudson River Ry.		28 83					
Newfoundland Ry.		145 88					
New York, New Haven and Hartford Ry.		39 16					
North American Transportation Co.		2,347 33					
New York, Chicago and St. Louis Ry.		0 60					
Nova Scotia Steel and Coal Co.		35 41					
New Brunswick and Prince Edward Island Ry.		3,251 30					
National Dispatch (Great Eastern Line)		279 01					
Northern Central Ry.		3 21					
Capt. Newcombe.		83 98					
J. Norris & Co.		22 22					
Nash's Creek Station.		6 25					
New Glasgow Station.		633 90					
New Castle Station.		102 75					
Nappan Station.		40 00					
Nicolet Station.		39 53					
Navigawauk Station.		3 00					
National Labour Congress		446 40					
North Shore Ry. Co.		97 19					
Ocean charges on freight		2,528 64					
Oliver Machinery Co.		13 22					
Post Office Dept.		65,352 37					
Prince Edward Island Ry.		2,193 01					
Pictou Station Labour.		200 00					
Pennsylvania Ry.		36 15					
Price Bros.		1,336 02					
Purcell & Fallon.		245 57					

Pittsburg, Cincinnati, Chicago and St. Louis Railway.....	4 74		
Pennsylvania Company.....	5 21		
Pere Marquette Ry.....	150 39		
Pittsburg and Lake Erie Ry.....	1 48		
Philadelphia and Reading Ry.....	17 79		
H. M. Price & Co.....	3 45 43		
J. N. Poullet.....	352 20		
Pickford & Black.....	161 87		
Poulson Iron Works.....	273 25		
D. Pottinger.....	8 88		
Pugwash Junction Station.....	1 85		
Quebec Central Railway.....	38,564 24		
Quebec Southern Railway (new acct.).....	856 70		
Quebec Southern Railway (old acct.).....	25,637 33		
Quebec and Lake St. John Ry.....	2 48		
Rutland Ry.....	16 87		
Chas. D. Ruddock.....	130 00		
Royal visit.....	9,154 44		
Ryan & McDonald.....	3,736 29		
Roekingham Station.....	27 47		
Red Pine Station.....	20 00		
Rivière du Loup Ticket Station.....	16 00		
Rivière du Loup Freight Station.....	136 82		
Remittances destroyed.....	788 81		
J. Richards & Son.....	116 24		
Wallace Ross.....	33 70		
Red Cross Steamship Line.....	5 87		
L. R. Ross.....	5 20		
Robb Engineering Co.....	1,281 14		
William Routhledge.....	10 30		
Railway Automatic Car Co.....	61 40		
Reid & Archibald.....	937 92		
Steamship 'Minto'.....	268 14		
Swift Refrigerator Line.....	8 57		
Standard Car Truck Co.....	465 30		
Sydney Cement Co.....	676 23		
St. Hyacinthe Station.....	8,879 05		
Steamship 'Verla'.....	50 78		
Steamship 'Lake Ontario'.....	17 04		
St. Francois Bridge Co.....	49 59		
Shediac Station.....	34 70		
Sackville Station.....	10 17		
St. John Station.....	3,096 46		
St. Alexandre Station.....	25 50		
St. Louise Station.....	0 66		
Springhill and Parrsboro' Ry.....	3,161 99		
St. Arsène Station.....	107 12		
Carried forward.....	2,166,198 23		
Carried forward.....	2,913,284 76		

9-10 EDWARD VII., A. 1910

No. 8.—INTERCOLONIAL RAILWAY—Continued.
GENERAL BALANCE, YEAR ENDED MARCH 31, 1909—Continued.

Dr.	\$	cts.	\$	cts.	Cr.	\$	cts.
Brought forward.....			2,166,198	23	Brought forward.....		
To							2,913,284 76
Ste. Luce Station.....	80	00					
Schooner 'Mary Jane'.....	71	30					
R. A. and J. Stewart.....	41	39					
St. John Street Ry.....	31	00					
St. Anaclet Station.....	11	00					
Salisbury and Harvey Ry.....	9,219	05					
Sterling Tank Line.....	2	29					
Seaboard Air Line.....	0	25					
St. Louis Iron Mountain and Southern Ry.....	1	86					
Santa Fe Refrigerator Line.....	2	76					
St. Louis South Western Ry.....	0	20					
Silliker Car Co.....	18	20					
Sydney Mines Station.....	95	69					
Ste. Monique Station.....	10	00					
J. B. Sangster.....	22	28					
J. Willard Smith.....	10	00					
Temiscanata Ry.....	316	23					
Tobique Valley Ry.....	2,739	25					
Toronto, Hamilton and Buffalo Ry.....	2	82					
Trois Pistoles Pulp and Paper Co.....	73	82					
Transcontinental Railway Commissioners.....	1,349	09					
Trois Pistoles Station.....	97	37					
Town of Dartmouth.....	32,000	00					
E. Tapley.....	10	00					
Toledo, St. Louis and Western Railway.....	20	16					
C. P. Talon.....	82	17					
Toronto Construction.....	59	40					
S. M. Tweedie.....	128	00					
S. Venoit.....	71	50					
Uncurrent and failed bank notes.....	82	20					
Valley Station.....	6	65					
Union Bearing Co.....	928	18					
Union Pacific Ry.....	0	51					
Wabash Ry.....	182	73					
Western Telegraph Co.....	254	94					
A. M. Whitman & Son.....	150	00					
Wentworth Station.....	33	24					
Western Counties Ry., General.....	15,893	35					
" " Traffic.....	64	57					
	15,957	92					

SESSIONAL PAPER No. 20

Wellford Station	55 00				
E. A. Wallberg	4,675 83				
Western Maryland Ry.	678 21				
York and Carleton Ry.	407 56				
		654,637 55			
Individuals and Companies ledger—suspense :—					
H. Began	12 08				
General storekeeper	176 17				
Dominion Atlantic Ry.	42 05				
Dept. Rys. & Canals, stores account	0 44				
Halifax & Southwestern Ry.	82 04				
North Shore Ry.	25 20				
Shives Lumber Co.	1 13				
		339 11			
Traffic Ledger—					
H. & A. Allan	990 42				
Allan Bros. & Co.	1,531 07				
J. & A. Allan	4 95				
Beaver Line Steamers	1,156 13				
Boston, Halifax & P. E. Island Steamship Co.	29 23				
Dominion S.S. Co.	375 15				
Dept. of Marine & Fisheries	2 65				
Grand Trunk Ry.	70,371 61				
Matheway Lane	11 10				
William Miller	258 43				
R. C. W. McQuaig	522 78				
Quebec Central Ry.	218 81				
Newfoundland Ry.	5,491 89				
Salvation Army	305 64				
St. Lawrence Steamboat Co.	255 33				
World Travel Co.	51 30				
Western Passenger Association	121 93				
		81,698 42			
Car Service Ledger—					
Atlanta & Birmingham Air Line	1 75				
Addystone & Ohio River Ry.	2 00				
Ashland & Western Railway	0 25				
Bennettsville & Cheraw Ry.	1 25				
Buffalo & Susquehanna Ry.	8 25				
Chicago, Cincinnati & Louisville Ry.	137 25				
Chicago, Great Western Ry.	171 00				
Carolina Valley Ry.	0 75				
Des Moines Union Ry.	0 60				
Petroit, Toledo & Tronton Ry.	3 25				
Erie Ry.	1 25				
East Carolina Ry.	0 25				
Georgia Northern Ry.	5 00				
		2,902,873 31			
Carried forward			Carried forward		2,913,284 76

No. 8.—INTERCOLONIAL RAILWAY—Continued.
GENERAL BALANCE, YEAR ENDED MARCH 31, 1909—Continued.

Dr.	\$	cts.	Ct.	\$	cts.
Brought forward.....			Brought forward.....		
To					\$
Greenwick & Johnsonville Ry.....	5	25			cts.
Mississippi Valley Ry.....	1	00			
Minneapolis & St. Louis Ry.....	3	60			
New York, Philadelphia & Norfolk Ry.....	6	50			
Norwood & St. Lawrence Ry.....	124	00			
Pine Bluff & Western Ry.....	0	80			
Randolph & Cumberland Ry.....	0	25			
Raleigh & Charleston Ry.....	0	75			
Toledo Terminal Ry.....	67	05			
Trinity & Brazos Valley Ry.....	0	25			
White River Ry.....	18	75			
				561	05
To Rents Ledger—					
R. McDonald.....	0	01			
D. McKinnon.....	39	00			
Theo. Roucher.....	15	00			
J. J. Irvine.....	0	29			
E. D. McGrath.....	0	01			
George Ingram.....	12	00			
James Linkletter.....	32	00			
Patrick Drysdale.....	4	50			
Canadian Pacific Ry.....	886	89			
John Fowles.....	81	00			
Willard Lewis.....	72	00			
James Mettlinley.....	32	00			
Howard Trites.....	15	00			
Newfoundland Ry.....	291	62			
James Mahoney.....	0	01			
Steamer <i>Granville</i>	50	00			
F. Pichette.....	105	00			
Almer Smith.....	6	18			
Mrs. W. W. McLellan.....	115	20			
Louis Lambert.....	3	00			
George Owens.....	3	00			
James Wales.....	110	00			
F. W. Cunningham.....	957	56			
A. S. McGibbon & Co.....	225	00			
A. Tower.....	7	00			
H. McFadden.....	12	00			
F. E. Moriarty.....	10	67			
					2,913,384 76

T. A. Kierstead.....	8 00
Jos. Gallagher.....	6 00
Mrs. Burke.....	4 00
A. McCoskelyn.....	6 00
E. Glaspey.....	6 00
J. McAfee.....	6 00
John Brown.....	7 50
John McGowan.....	383 33
Atlantic & Lake Superior Ry.....	8 00
Mary Warwick.....	7 50
N. Lamontagne.....	16 00
C. Vellieux.....	192 00
Dame C. W. Carrier.....	48 00
Olivier Gingras.....	12 00
Misses Camire.....	11 00
Maurice Camire.....	80 00
Mrs. J. Atkinson.....	72 00
Mrs. L. Roberge.....	32 00
James Cloutier.....	32 00
Geo. Cloutier.....	4 50
Frank Cloutier.....	143 00
A. Begin.....	31 50
Jean Lamothe.....	22 00
Napoleon Boisvert.....	18 00
Joseph Bergeron.....	6 00
H. St. Lambert.....	5 00
Louis Boisvert.....	161 00
Emilie St. Laurent.....	7 00
Peter Bernier.....	16 00
David Rouleau.....	10 50
Louis Begin.....	4 00
E. C. Symes.....	19 50
Mrs. Thibault.....	0 03
L. N. Letarte.....	1 00
J. D. Denings.....	5 00
Joseph H. Higgins.....	6 00
J. A. R. Weir.....	3 75
Geo. W. White.....	1 00
Clark, Skellings & Co.....	2 00
C. B. McCreedy.....	2 00
Hugh Hopkins.....	1 00
Thomas Sharpe.....	3 00
Mrs. D. McLean.....	10 00
Dennis McEvoy.....	0 50
E. S. Ve.....	2 00
A. R. Copp.....	1 00
J. H. Wilson.....	0 25
Jas. R. Stewart.....	
Carried forward.....	2,903.434 86

SESSIONAL PAPER No. 20

George Mann.....	0 50		
Benjamin Smith.....	0 25		
G. Lovett.....	0 50		
P. Z. Dube.....	8 00		
E. Hutchinson.....	5 00		
D. McEvoy.....	10 00		
Price Bros.....	2 00		
Bay des Chaleurs Ry.....	20 00		
Geo. B. Barrette.....	0 25		
B. Gladwin.....	4 00		
Atkinson & McLeod.....	1 00		
N. Pushe.....	5 00		
E. O. Steeves.....	1 00		
A. Dunbar.....	5 00		
M. McLean.....	20 00		
William Clark.....	3 00		
Geo. Lightle.....	1 00		
John C. Guss.....	15 00		
M. A. McLeod.....	5 00		
I. Matheson & Co.....	1 00		
James Ferguson.....	0 25		
W. T. Scribner.....	71 12		
Patrick Gilday.....	0 25		
R. Allen.....	5 00		
John C. McNeil.....	10 00		
John Leger.....	5 00		
Geo. Lovett.....	0 25		
Marquis & Turcotte.....	1 00		
Nat. McNair.....	1 00		
Alex. McDonald.....	1 00		
John C. McNeil.....	5 00		
Rhodes, Curry & Co.....	1 00		
H. F. McDougall.....	3 00		
Town of Anheist.....	1 00		
Raymond Daud.....	5 00		
Canadian Express Co.....	25 00		
Town of Fraserville.....	1 00		
Fenelon Belziles.....	1 00		
A. C. Thompson & Co.....	2 00		
Town of North Sydney.....	2 00		
Town of Shediac.....	6 00		
C. A. Atkinson.....	2 00		
E. H. Peoples.....	2 00		
Domtun Express Co.....	25 00		
Robert McLean.....	1 00		
James Skean.....	25 00		
J. G. Jones.....	10 00		
D. C. McKenzie and R. Graham.....	10 00		
Carried forward.....		2,903,434 36	
			2,913,281 76

No. 8.—INTERCOLONIAL RAILWAY—Concluded.
GENERAL BALANCE, YEAR ENDED MARCH 31, 1909—Concluded.

Dr.	\$ cts.	\$ cts.	Cr.	\$ cts.	\$ cts.
To		2,903,431 36	Brought forward.....		2,913,284 76
D. Patterson.....	3 00				
Joseph Raymond.....	3 00				
Rothsay Water and Improvement Co.....	2 00				
Town of Amherst.....	1 00				
M. A. McLeod.....	5 00				
Canadian Express Co.....	9 00				
Town of Pictou.....	1 00				
A. M. Rowan.....	300 00				
W. R. Streeves.....	1 00				
Halifax Transfer Co.....	250 00				
D. E. McKeigan.....	1 00				
M. J. McNeil.....	1 00				
New Glasgow Electric Light Co.....	25 00				
LeClaire & Daigle.....	1 00				
Central Telephone Co.....	857 00				
New Brunswick Telephone Co.....	800 00				
Price Bros.....	5 00				
Post Office Dept.....	1 00				
Quebec Central Railway.....	1 00				
G. L. Tullock.....	1 00				
D. M. Grant.....	2 00				
Canadian Express Co.....	12 50				
I. B. Shaffner & Co.....	5 00				
Charles Love.....	1 00				
J. H. Hewson and A. A. Jones.....	5 00				
Freue-Lord.....	1 00				
Canadian Express Co.....	0 12				
A. H. McLeod.....	1 00				
Pictou Cottage Hospital Board.....	1 00				
Dominion Express Co.....	12 50				
R. A. McMillan.....	3 00				
Scotia Pure Milk Co.....	20 00				
Consolidated Coal Co.....	10 00				
Canadian Express Co.....	0 22				
Nova Scotia Telephone Co.....	5 00				
Henry Goodwin.....	1 00				
Town of Rimouski.....	18 00				
Sutherland Rifle Sight Co.....	1 00				
Lieut. Genl. J. W. Laurie.....	10 00				

9-10 EDWARD VII., A. 1910

No. 10.—INTERCOLONIAL RAILWAY.

STATEMENT of Averages, year ended March 31, 1909.

Mileage of railway.....	1,447 13
Engine mileage.....	9,208,327
Total train mileage.....	6,865,204
Total car mileage.....	93,374,119
Ratio of earnings to gross earnings—	Per cent.
Revenue from transportation.....	99 13
Revenue from operations other than transportation.....	85
Gross earnings per mile of railway..... Dollars.	5,892 40
" engine mile..... Cents.	92 60
" train mile..... Dollars.	1 24
" car mile..... Cents.	9 13
Ratio of expenses to gross earnings—	Per cent.
Maintenance of way and structures.....	29 77
" equipment.....	24 58
Traffic expenses.....	2 19
Transportation expenses.....	59 18
General expenses.....	2 67
Expenses per train mile—	
Maintenance of way and structures..... Cents.	25 80
" equipment..... "	30 54
Traffic expenses..... "	2 72
Transportation expenses..... "	75 50
General expenses..... "	3 31
Expenses per mile of railway—	
Maintenance of way and structures..... Dollars.	1,224 08
" equipment..... "	1,448 72
Traffic expenses..... "	129 06
Transportation expenses..... "	3,486 96
General expenses..... "	157 07
Locomotive and car repairs, per locomotive and car—	
Locomotives..... Dollars.	1,884 53
Passenger cars..... "	630 51
Freight cars..... "	47 86

C. F. BURNS,

Auditor of Disbursements.

S. L. SHANNON,

Comptroller.

WINDSOR BRANCH RAILWAY.

OFFICE OF THE GENERAL MANAGER OF GOVERNMENT RAILWAYS.

MONCTON, N.B., June 16, 1909.

SIR,—I have the honour to submit the following statements showing the results of the working of the Windsor Branch Railway for the year ended March 31, 1909:—

- No. 1.—Revenue account.
- 2.—Maintenance of way and structures.
- 3.—General balance.
- 4.—Statement of earnings.

I also send you the report of the engineer of maintenance on the condition of the permanent way and works.

SESSIONAL PAPER No. 20

This line, 32 miles in length, was operated during the year by the Dominion Atlantic Railway Company on the same terms as last year, the company being allowed to retain two-thirds of the gross earnings, the balance, one-third, being paid over to the government, the latter maintaining the line.

The gross earnings show a decrease, compared with those of the previous year, as follows :—

Earnings 1908-9.. . . .	\$ 56,031 33
Earnings 1907-8.. . . .	56,430 41
Decrease.. . . .	\$ 399 08

The decrease was in freight traffic. There was a small increase in passenger traffic and in mails and sundries.

The net earnings for the year were \$19,796.78.

The engineer of maintenance reports that this line has been maintained in good condition.

I have the honour to be, sir,

Your obedient servant,

D. POTTINGER,

General Manager Govt. Railways.

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer,

Department of Railways and Canals,

Ottawa, Ont.

INTERCOLONIAL RAILWAY.

OFFICE OF THE ENGINEER OF MAINTENANCE.

MONCTON, N.B., May 27, 1909.

SIR,—I have the honour to submit herewith the report of the maintenance of the Windsor branch for the year ending March 31, 1909.

TRACK.

During the year 122,034 feet of 4-inch and 4½-inch rails were taken out of the track and the same quantity of 4½-inch rails relaid.

TIES.

18,352 ordinary ties and 2 sets of switch ties were renewed during the year.

BALLASTING.

During the year 90 cubic yards of ashes were put under the track.

SWITCHES AND SEMAPHORES.

During the year necessary repairs were made to all switches and semaphores.

SIDINGS.

During the year 787 feet of additional siding accommodation has been provided.

9-10 EDWARD VII., A. 1910

FENCING.

During the year 2,569 rods of wire fence was built by contract.
Necessary repairs were made to existing fences throughout the branch.

WHARFS AND TRESTLES.

Repairs.

Necessary repairs were made to wharfs and trestles.

BRIDGES AND CULVERTS.

Repairs.

Ellershouse, culvert; Jordan's, bridge; Mount Uniacke, culvert; Newport, culverts; Stillwater, culvert; Ste. Croix, culvert; Three Mile Plains, culvert; Windsor, culvert.

BUILDINGS AND PLATFORMS.

Repairs.

Ellershouse, tool house; Hartville, station platform; Newport, station; Windsor station platform; Windsor, old station; Windsor, engine-house.

GENERAL.

Necessary repairs were made to cattle-guards, road crossings and gates throughout the line, where required.

Glazing was done and glass put in where required.

Outhouses and approaches to public road crossings were whitewashed.

Semaphores, switches and signals were painted, when required.

Necessary repairs were made to trollies, hand cars and wheel-barrows, throughout the line.

The road has been maintained in good condition.

I have the honour to be, sir,
Your obedient servant,

T. C. BURPEE,

Engineer of Maintenance of Way and Works.

D. POTTINGER, I.S.O.,

Member, Govt. Railways Managing Board,
MONCTON, N.B.

No. 1.—WINDSOR BRANCH RAILWAY.

REVENUE Account, Year ended March 31, 1909.

Expenditure.		Earnings	
Maintenance of way and structures.	\$36,234 55	Passengers earnings.. . . .	\$14,699 30
Balance.. . . .	19,796 78	Freight earnings.. . . .	40,180 12
		Mail Earnings.. . . .	1,151 84
	\$56,031 33		\$56,031 33

E. and O. E.,
MONCTON, N. B.

(Sgd.) S. L. SHANNON.
Comptroller.

SESSIONAL PAPER No. 20

No. 2.—WINDSOR BRANCH RAILWAY.

MAINTENANCE of Way and Structures, year ended March 31, 1909.

	\$	cts.
Superintendence.....	1,760	53
Ballast.....	81	78
Ties.....	6,534	48
Rails.....	8,456	51
Other track material.....	2,778	74
Roadway and track.....	10,675	84
Removal of snow and ice.....	391	89
Bridges, trestles and culverts.....	1,173	59
Grade crossings, fences, cattle-guard and signs.....	2,825	99
Signals and interlocking plants.....	4	50
Telegraph and telephone lines.....	1	05
Buildings, fixtures and grounds.....	1,009	03
Docks and wharfs.....	75	25
Roadway tools and supplies.....	153	44
Work equipment—Repairs.....	5	23
Stationery and printing.....	115	04
Other expenses.....	197	66
Total.....	36,234	55

E. & O. E.,
 MONCTON, N.B.

S. L. SHANNON,
Comptroller.

No. 3.—WINDSOR BRANCH RAILWAY.

GENERAL Balance, year ended March 31, 1909.

DR.	\$	cts.	CR.	\$	cts.
To Stores Department.	26,837	30	By Dominion Account.....	26,837	30

E. & O. E.,
 MONCTON, N.B.

S. L. SHANNON,
Comptroller.

9-10 EDWARD VII., A. 1910

No. 4.—WINDSOR BRANCH RAILWAY.

STATEMENT OF MONTHLY RECEIPTS—One-third Earnings.

Month.	Passenger Earnings.	Freight Earnings.	Mail Earnings.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1908.				
April	864 84	2,717 43	95 68	3,677 95
May	986 51	2,445 82	95 68	3,528 01
June	1,405 31	2,240 46	95 68	3,741 45
July	1,448 95	1,997 83	96 91	3,543 69
August	1,970 50	1,874 66	96 91	3,942 07
September	2,472 38	4,955 22	96 90	7,524 50
October	1,510 47	5,488 74	96 91	7,096 12
November	920 61	5,072 23	96 90	6,089 74
December	1,044 55	3,472 12	96 91	4,613 58
1909.				
January	691 47	3,485 47	94 46	4,271 40
February	652 25	3,043 92	94 45	3,790 62
March	731 46	3,386 29	94 45	4,212 20
	14,699 30	40,180 19	1,151 84	56,031 33

E. & O. E.,
MONCTON, N.B.

S. L. SHANNON,
Comptroller.

PRINCE EDWARD ISLAND RAILWAY.

OFFICE OF THE GENERAL MANAGER OF GOVERNMENT RAILWAYS,

MONCTON, N.B., June 16, 1909.

SIR,—I have the honour to submit the following report on the working of the Prince Edward Island railway for the fiscal year ended March 31, 1909.

I inclose the report of the superintendent, including statements of the various accounts; also the report of the chief engineer on the works charged to capital account.

The mileage of the railway was the same as last year, 267.5 miles.

The expenditure on capital account during the year was \$561,206.90.

This makes the total cost of the railway on March 31, 1909, \$8,258,967.94. Of this expenditure during the year \$227,661.81 was on account of increased accommodation at Charlottetown. The details of this work as well as explanations in regard to other expenditures on capital account will be found in the reports of the superintendent and of the chief engineer.

The rolling stock was increased by the construction, in the railway workshops at Charlottetown, of forty-two freight cars, all of which were charged to capital.

The working expenses for the year were.....\$400,330 41

The gross earnings were.....311,319 63

Difference.....\$ 89,010 78

The gross earnings for the year show an increase of \$6,739.80 over the previous year, the increase being in both passenger and freight traffic; there was a small decrease in mails and sundries.

SESSIONAL PAPER No. 20

There was an increase of \$382.62 in the working expenses compared with last year. The necessary work was done to maintain the permanent way and works and the rolling stock, and they are in a state of efficiency.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) D. POTTINGER,
General Manager, Government Railways.

M. J. BUTLER, Esq., C.E.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa, Ont.

PRINCE EDWARD ISLAND RAILWAY.

SUPERINTENDENT'S OFFICE.

CHARLOTTETOWN, P.E.I., May 20, 1909.

SIR,—I have the honour to submit the following report of the working of the Prince Edward Island Railway, for the fiscal year ended March 31, 1909:—

I also inclose the report of the mechanical superintendent and the following statements prepared by the accountant and auditor, and the mechanical accountant and storekeeper:

- No. 1. Capital.
2. Revenue.
3. Maintenance of way and structures.
4. Maintenance of equipment.
5. Traffic expenses.
6. Transportation expenses.
7. General expenses.
8. General stores.
9. General balance.
10. Statement of averages.
Statement of receipts.
Passenger statement.
Freight statement.
Descriptive statement of freight transported.
- A. Statement showing the number of locomotives and the various classes of cars.
- B. Statement showing the mileage made and the coal, oil and waste consumed by locomotives.

The mileage of the railway in operation during the year was the same as last year, 267.5 miles.

9-10 EDWARD VII., A. 1910

CAPITAL ACCOUNT.

The expenditure to March 31, 1908, was \$7,697,761 04

The additions during the year were as follows :—

To increase accommodation at Charlottetown.. . . .	\$ 227,661 81
M. J. Haney, award.. . . .	164,633 33
Extension of wharf at Souris.. . . .	41,480 83
Rolling stock.. . . .	34,622 32
Spur line and ballast pit.. . . .	29,832 57
New machinery.. . . .	19,893 79
Steel rails.. . . .	9,999 90
Surveys of branch lines.. . . .	6,915 56
Montague branch, land claims.. . . .	6,851 41
Increased accommodation and facilities along the line..	6,549 70
Murray Harbour branch, land claims.. . . .	4,383 77
Branch line, Harmony to Elmira.. . . .	3,618 94
Land purchase.. . . .	2,546 28
Vernon River branch, land claims.. . . .	2,216 69
	561,206 90

Making the total on March 31, 1909.... .. \$8,258,967 94

Rolling stock—

There were 42 box freight cars built in the railway works at Charlottetown.

Steel rails—

A quantity of 56 and 67-lb. second-hand rails were purchased from the Inter-colonial Railway to be put down in the main line between Charlottetown and Summerside in the place of 50-lb. steel, which in turn are being put in sidings to take the place of old iron of 40 lbs. to the yard that have now become obsolete except for scrap.

New machinery—

Additional new and modern machinery has been purchased to equip the new shops with.

Increased accommodation along the line—

New caretakers' stations were erected at West Devon, Portage, McNeill's Mills, St. Nicholas, Perth, Selkirk and Belle River.

The other expenditures under the head of capital are fully explained by the chief engineer.

REVENUE ACCOUNT.

Notwithstanding the temporary depression of business generally, the revenue increased slightly over the previous year.

The crops were good, and prices for all farm produce and the fisheries were well maintained, and the province has experienced a satisfactory measure of prosperity.

The gross earnings and working expenses for the year compare as follows :—

Gross earnings.. . . .	\$ 311,319 63
Working expenses.. . . .	400,330 41

Difference.. . . . \$ 89,010 78

SESSIONAL PAPER No. 20

The gross earnings compare with the previous year, as follows :—

In 1907-8.. . . .	\$ 304,579 83
1908-9.. . . .	311,319 63
Increase.. . . .	\$ 6,739 80

The earnings from passenger traffic compare as follows:—

In 1907-8.. . . .	\$ 132,382 76
1908-9.. . . .	136,534 04
Increase.. . . .	\$ 4,151 28

The earnings from freight traffic compare as follows :—

In 1907-8.... .	\$ 146,280 99
1908-9.. . . .	149,150 61
Increase.. . . .	\$ 2,869 62

The earnings from mails and sundries compare as follows :—

In 1907-8.... .	\$ 25,916 08
1908-9.. . . .	25,634 98
Decrease.. . . .	\$ 281 10

The number of passengers carried compares as follows:—

	Number.
In 1907-8.. . . .	317,828
1908-9.. . . .	332,758
Increase.. . . .	14,930

The weight of freight carried compares as follows :—

	Tons.
In 1907-8.. . . .	97,250
1908-9.. . . .	106,090
Increase.. . . .	8,840

WORKING EXPENSES.

The working expenses compare with the previous year, as follows :—

In 1907-8.. . . .	\$ 399,947 79
1908-9.. . . .	400,330 41
Increase.. . . .	\$ 382 62

The averages compared with the previous year, as follows :—

Per mile run by locomotives.	
In 1907-8.... .	90.49
1908-9.. . . .	88.46
Per mile run by trains.	
In 1907-8.. . . .	120.75
1908-9.. . . .	119.51
Expenditure per mile of railway.	
In 1907-8.. . . .	\$ 1,497 92
1908-9.. . . .	1,499 36

9-10 EDWARD VII., A. 1910

TRACK.

Thirty-four thousand, nine hundred and ninety-five track ties, thirty-eight sets switch ties and thirty-four switch head-blocks with frames were renewed.

There were laid in Charlottetown yard 3,474 feet of 50-lb. steel rails to replace iron rails, and 700 feet of 56-lb. steel rails. On the main line between Fredericton and Elliott's one and three-quarter miles were laid with 67-lb. steel rails to replace 50-lb. steel rails, and between Charlottetown and Royalty Junction four miles of 50-lb. steel rails were replaced with 56-lb. steel rails. On Souris wharf 1,650 feet of 50-lb. steel rails were laid to replace iron rails.

Twelve hand cars were repaired, and six new lorry tops built. Twelve track levels, six lifting boards, and twelve snow scrapers for cleaning platforms were made.

SIDINGS.

At Alberton 1,250 feet of 50-lb. steel rails were laid on wharf track to replace iron rails.

At O'Leary 720 feet of 50-lb. steel rails were laid on siding to replace iron rails.

At Conway the mill siding was extended 130 feet.

At Ellerslie 1,440 feet of 50-lb. steel rails were laid on siding to replace iron rails.

At Port Hill 1,440 feet of 50-lb. steel rails were laid on siding to replace iron rails.

At Wellington 1,680 feet of 50-lb. steel rails were laid on siding to replace iron rails.

At Kensington 1,254 feet of 50-lb. steel rails were laid on sidings to replace iron rails.

At Freetown 216 feet of 50-lb. steel rails were laid on siding to replace iron rails.

At Emerald 519 feet of 50-lb. steel rails were laid on sidings to replace iron rails.

At Cape Traverse a new siding, 120 feet long, consisting of 50-lb. steel rails, and a new frog and switch gear, was put in for a plough and flanger, and 384 feet of 50-lb. steel rails were laid on another siding to replace iron rails.

At Fredericton 450 feet of 50-lb. steel rails were laid on sidings to replace iron rails.

At Royalty Junction 3,032 feet of 50-lb. steel rails were laid on sidings, and 960 feet of 50-lb. steel rails laid on wye, to replace iron rails.

At Charlottetown 150 feet of 50-lb. steel rails were laid on stationary engine track to replace iron rails.

At Tracadie 1,440 feet of 50-lb. steel rails were laid on siding to replace iron.

At New Zealand 263 feet of new siding, a new frog and a set of switch gear were put in between New Zealand and Harmony.

At Souris 760 feet of new sidings were laid on wharf with 50-lb. steel rails. On Acorn's Mill siding 65 feet of 50-lb. steel rails were laid to replace iron rails.

At Melville the siding was extended 50 feet.

FENCING.

There were 38,253 feet of new Page wire fence and 660 feet new barbed wire erected on cedar posts; 6,454 feet of new permanent snow fence built; 3,360 feet of permanent snow fence rebuilt, and 431 panels portable snow fence built and placed where most needed. A large quantity of temporary snow fence was erected with brush and other material.

All fences that needed repairs were attended to.

Fifty farm gates were renewed.

BALLASTING.

Eight hundred and seventy-three cars of ballast were distributed where most needed along the line.

SESSIONAL PAPER No. 20

Nine hundred and sixty-three cars of clay were taken from cuttings and ditches, and used to grade station grounds and widen embankments. Thirty-six cars of ashes were distributed in wet and low places in the track.

BRIDGES.

At Tignish, Pig Brook and Harper's bridges received new coverings of hard pine ties.

At Bloomfield, Trout Brook bridge had its stone work repaired.

At Ellerslie and Port Hill the stone work of bridges was repaired.

At Emerald the stone work of three bridges was repaired.

Bradalbane, Elliott's, Mt. Stewart, and 48 road bridges were supplied with new coverings.

CULVERTS.

At Conway a new concrete pipe culvert, 22 feet long, 18 inches in diameter, was put in.

At Ellerslie a new concrete pipe culvert, 22 feet long 18 inches in diameter, was put in.

At Colville a new concrete culvert, 56 feet long, 24 inches in diameter, was put in.

At Charlottetown a new concrete pipe culvert, 50 feet long, 24 inches in diameter, was put in.

At St. Teresa, Cardigan and Georgetown new concrete pipe culverts, 22 feet long, 12 inches in diameter, were put in.

At Souris an earthenware culvert, 66 feet long, 24 inches in diameter, was put in.

Twenty-seven wooden culverts were repaired with hemlock and other timber. Stone culverts received repairs where necessary.

Forty-seven cattle-guards were rebuilt with hemlock ties, hard pine, hemlock wall plates and timber.

WHARFS AND BREASTWORKS.

At Alberton repairs were made to wharf, for which purpose 40 pieces hemlock timber, 1 car brush, 2 cars stone and 100 drift bolts were used.

At Summerside in repairing wharf 8 creosoted piles, 4 pieces hard pine, 15,000 feet hemlock plank, 1 car old ties, 2 cars of ashes, 2,600 feet of hemlock timber, and 1,700 feet creosoted boards for facing wharf were used.

At Georgetown repairs were made to wharf, and 1,600 old ties used for ballast floor.

At St. Peter's 240 feet of new breastwork was built.

BUILDINGS AND PLATFORMS.

Tignish.—New sills were placed under engine-house, and three pits in it rebuilt. A new porch was added to agent's dwelling. Repairs were made to freight-house. A concrete wall was built in the water tank, and a new trestle placed under it.

St. Louis.—A new cattle-pen was built.

Alberton.—Three new storm windows were made for agent's dwelling. A new fence and two new gates were placed around agent's dwelling.

Elmsdale.—Windows and door of station were repaired.

Bloomfield.—Station platform was repaired.

O'Leary.—A gravel roof was placed on station, and a new covering of Flintkote on freight-house. Walls of freight-house were repaired.

Coleman.—Doors and windows of station were repaired.

Ellerslie.—Station platform was renewed, and necessary repairs made to station and dwelling.

9-10 EDWARD VII., A. 1910

Port Hill.—Flues were repaired, station and dwelling were repaired and painted.

Northam.—The station platform was repaired and raised.

Richmond.—Station platform was repaired and raised, and a new section tool-house built.

Wellington.—Station was raised and painted, and new sills put under it, and the roof shingled. Waiting-room was sheathed, and a new door and frame placed in it. Offices received a new bay window, and hardwood floor, and was sheathed.

Miscouche.—Station received a new panel door, and doors, windows, platform and flue were repaired.

Summerside.—Coal-shed, station and dwelling were repaired. A new bookcase was placed in the telegraph office, and a new set of Fairbanks scales in freight-house.

Kensington.—Station platform was renewed.

Freetown.—Station and platform were repaired. Four new storm windows were made for agent's dwelling.

Emerald.—Station, platform, dwelling and flues were repaired. Station and dwelling were painted.

Cape Traverse.—Engine-house received a new covering of Flintkote roofing and tar-paper. Station and platform were repaired. Freight-house, agent's porch and outside of station were painted.

Elliott's.—Station platform was renewed.

Clyde.—A new shelter station and platform were built.

Hunter River.—Station and platform were repaired. Two rooms of agent's dwelling were papered and painted. A new concrete wall was placed in the reservoir.

Winsloe.—Station platform was renewed.

Royalty Junction.—Waiting-rooms, office and outside of station were painted. Agent's dwelling and wooden platform were repaired.

O'Leary.—A new cattle-pen was built.

Sherwood.—A new platform was built.

York.—Flue on station was repaired, and a new flue put on section tool-house.

Suffolk.—The station platform was renewed.

Bedford.—Windows and doors of station and station platform were repaired.

Tracadie.—Windows and doors of station were repaired.

Mount Stewart.—Station, dwelling and platform were repaired.

Peakes.—Flue of station was repaired.

Cardigan.—Station was repaired and station platform renewed.

Emerson.—Station platform was renewed.

Montague.—A new flue was built in station.

Georgelown.—Coal-shed and engine-house were repaired.

Perth.—Water tank received a new covering and new walls were built in it.

Lot 40.—New sills were placed under station and roof and walls shingled. Waiting-rooms and caretaker's room were sheathed, papered and painted. New floors were laid in waiting-room and two other rooms.

Morell.—Station and agent's dwelling were repaired and seven new storm windows made for agent's dwelling.

St. Peter's.—Station platform was repaired.

Five Houses.—Station platform was renewed.

New Zealand.—Station platform was renewed.

Harmony.—Station platform was renewed.

St. Charles.—Station platform was renewed.

Souris.—Coal-shed, station and dwelling were repaired. Engine-house and station platform were renewed. Roof of warehouse on wharf was shingled.

Village Green.—Station platform was raised.

Surrey.—Station was raised in order to make it easier to load and unload freight from train.

Millview.—Station and platform were raised.

SESSIONAL PAPER No. 20

Glencoe.—Station and platform were raised.

Vernon River.—A new cattle-pen was built.

Iris.—The old station (shelter) at Belle River was moved to Iris, where there was nothing but a platform before.

Hopefield.—Station and platform were raised.

All other buildings requiring repairs were attended to.

STORES.

The value of stores purchased was.. . . .	\$184,905 54
The value of stores used was.. . . .	187,336 95
The value of material sold was.. . . .	1,692 53
The value of stores on hand at the end of the year was:—	
Miscellaneous.. . . .	\$ 44,686 66
Fuel.. . . .	15,144 91
Roadway and bridge material.. . . .	17,610 70
	3 77,442 27

GENERAL.

The rolling stock, roadbed and buildings have all received generous attention, and are in a state of efficiency.

I inclose a return of casualties which occurred during the year.

I have the honour to be, sir,

(Sgd. G. A. SHARP,
Superintendent.

D. POTTINGER, Esq., I.S.O.,
Member of Board of Management,
Canadian Government Railways,
Moncton, N.B.

No. 1.—PRINCE EDWARD ISLAND RAILWAY.

CAPITAL ACCOUNT —TWELVE MONTHS ENDED MARCH 31, 1909.

1908.	Dr.		\$	cts.	1908.	Cr.	\$	cts.
March 31	To cost of P. E. I. Railway to date.....		7,697,761	04	March 31. By Dominion of Canada.....		7,697,761	04
1909.					March 31. By Dominion of Canada.....		561,206	90
March 31.	To increased accommodation at Charlottetown.. \$	227,661 81						
	M. J. Haney award.....	164,633 33						
	Extension of wharf at Souris.....	41,480 83						
	Rolling stock.....	34,622 32						
	Spur line and ballast pit.....	29,832 57						
	New machinery.....	19,893 79						
	Steel rails.....	9,999 90						
	Surveys of branch lines.....	6,915 56						
	Montague Branch—land claims.....	6,851 41						
	Increased accommodation and facilities along the line.....	6,549 70						
	Murray Harbour Branch—land claims.....	4,383 77						
	Branch line—Harmony to Elmira.....	3,618 94						
	Land purchase.....	2,546 28						
	Vernon River Branch—land claims.....	2,216 69						
			561,206	90				
			8,258,967	94			8,258,967	94

E. & O. E.

Charlottetown, P.E.I.,

W. T. HUGGAN.

Accountant and Auditor.

SESSIONAL PAPER No. 20

No. 2.—PRINCE EDWARD ISLAND RAILWAY.

REVENUE ACCOUNT—TWELVE MONTHS ENDED MARCH 31, 1909.

EXPENDITURE.	\$ cts.	EARNINGS.	\$ cts.
Maintenance of way and structures . . .	114,473 32	Passenger earnings.	136,534 04
Maintenance of equipment	62,250 46	Freight earnings.	149,150 61
Traffic expenses	1,314 58	Mail and express earnings.	25,634 98
Transportation expenses	209,997 20		
General expenses	12,294 85		
	400,330 41	Balance	311,319 63
			89,010 78
	400,330 41		400,330 41

E. & O. E.

CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,

Accountant and Auditor.

No. 3.—PRINCE EDWARD ISLAND RAILWAY.

MAINTENANCE OF WAY AND STRUCTURES—TWELVE MONTHS ENDED MARCH 31, 1909.

	\$ cts.
No. 1. Superintendence.	2,734 44
2. Ballast.	1,610 91
3. Ties.	14,219 92
4. Rails.	1,551 20
5. Other track material.	2,150 66
6. Roadway and track	64,667 04
7. Removal of snow, sand and ice.	6,024 07
8. Bridges, trestles and culverts.	1,189 34
9. Over and under grade crossings.	75 11
10. Grade crossings, fences, cattle guards and signs.	5,340 43
12. Snow and sand fences and snow sheds.	2,061 55
13. Signals and interlocking plants.	45 65
14. Telegraph and telephone lines.	10 00
16. Buildings, fixtures and grounds.	8,487 78
17. Docks and wharfs.	2,176 59
18. Roadway tools and supplies.	1,463 72
19. Work equipment, repairs.	462 97
20. Work equipment, renewals.	15 81
23. Stationery and printing.	183 60
25. Other expenses.	2 50
	114,473 32

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CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,

Accountant and Auditor.

9-10 EDWARD VII., A. 1910

No. 4.—PRINCE EDWARD ISLAND RAILWAY.

MAINTENANCE OF EQUIPMENT—TWELVE MONTHS ENDED MARCH 31, 1909.

	\$	cts.
No. 28. Superintendence.....	6,333	57
29. Steam locomotives—repairs	23,946	86
35. Passenger train cars—repairs	14,235	31
36. Passenger train cars—renewals.....	2,431	56
38. Freight train cars—repairs.....	10,177	30
39. Freight train cars—renewals.....	668	85
47. Shop machinery and tools.....	1,742	52
50. Stationery and printing	338	18
52. Other expenses	6,244	83
56. Equipment loaned—Cr.....	3,868	52
	62,250	46

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CHARLOTTETOWN, P.E.I

W. T. HUGGAN.

Accountant and Auditor.

No. 5.—PRINCE EDWARD ISLAND RAILWAY.

TRAFFIC EXPENSES—TWELVE MONTHS ENDED MARCH 31, 1909.

	\$	cts.
No. 57. Superintendence.....	18	56
59. Advertising.....	909	35
60. Stationery and printing	373	47
65. Other expenses.....	13	20
	1,314	58

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CHARLOTTETOWN, P.E.I.

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Accountant and Auditor.

SESSIONAL PAPER No. 20

No. 6.—PRINCE EDWARD ISLAND RAILWAY.

TRANSPORTATION EXPENSES—TWELVE MONTHS ENDED MARCH 31, 1909.

	\$	cts.
No. 66. Superintendence.....	5,995	98
67. Despatching trains.....	2,531	73
68. Station employees.....	41,301	59
72. Station supplies and expenses.....	7,118	22
73. Yardmasters and their clerks.....	2,055	43
74. Yard conductors and brakemen.....	1,349	36
75. Yard switch and signal tenders.....	379	05
76. Yard supplies and expenses.....	61	40
77. Yard enginemen.....	4,164	40
78. Engine-house expenses—yard.....	808	58
79. Fuel for yard locomotives.....	4,489	19
80. Water for yard locomotives.....	73	00
81. Lubricants for yard locomotives.....	156	40
82. Other supplies for yard locomotives.....	147	00
86. Road enginemen.....	23,157	69
87. Engine-house expenses—road.....	10,032	42
88. Fuel for road locomotives.....	45,152	58
89. Water for road locomotives.....	2,501	80
90. Lubricants for road locomotives.....	1,623	91
91. Other supplies for road locomotives.....	812	40
94. Road trainmen.....	32,450	39
95. Train supplies and expenses.....	6,318	85
97. Crossing flagmen and gatemen.....	5	60
98. Drawbridge operation.....	670	82
99. Clearing wrecks.....	108	02
100. Telegraph and telephone—operation.....	6,423	30
101. Operating floating equipment.....	780	97
103. Stationery and printing.....	5,352	43
105. Other expenses.....	32	61
106. Loss and damage—freight.....	545	84
107. Loss and damage—baggage Cr.....	0	25
108. Damage to property.....	37	08
109. Damage to stock on right of way.....	80	50
110. Injuries to persons.....	278	91
	209,997	20

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CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,

Accountant and Auditor.

No. 7.—PRINCE EDWARD ISLAND RAILWAY.

GENERAL EXPENSES—12 MONTHS ENDED MARCH 31, 1909.

	\$	cts.
No. 113. Salaries and expenses of general officers.....	1,596	50
114. " " clerks and attendants.....	5,431	84
115. General office supplies and expenses.....	413	48
116. Law expenses.....	241	89
118. Relief Department expenses.....	3,990	32
120. Stationery and printing.....	611	15
121. Other expenses.....	9	67
	12,294	85

W. T. HUGGAN,

CHARLOTTETOWN, P.E.I.

Accountant and Auditor.

9-10 EDWARD VII., A. 1910

No. 8.—PRINCE EDWARD ISLAND RAILWAY.

STORES ACCOUNT—12 MONTHS ENDED MARCH 31, 1909.

1908.	Dr.	\$ cts.	\$ cts.	\$ cts.
March 31.. 1909.	To balance brought forward			81,566 21
March 31..	To Purchases during the year		165,496 10	
	Charges from other departments		9,068 90	
	Labour, &c.		5,316 44	
	Pay rolls		5,024 10	
				184,905 54
	Cr.			266,471 75
March 31..	By Issues during the year			189,029 48
	Balance.. { Ordinary stores, including stationery..	44,686 66		
	{ Fuel	15,144 91		
	{ Roadway and bridge material	17,610 76		
				77,442 27

W. T. HUGGAN,

CHARLOTTETOWN, P.E.I.

Accountant and Auditor.

No. 9.—PRINCE EDWARD ISLAND RAILWAY.

GENERAL BALANCE—12 MONTHS ENDED MARCH 31, 1909.

Dr.	\$ cts.	Cr.	\$ cts.
General stores	77,442 27	Dominion account	99,531 38
Post Office Department	12,431 18	Unclaimed wages	122 63
Cash	4,805 62	Canadian Westinghouse Company....	19 00
Station agents	2,309 17		
Accident insurance	2,277 65		
Department of Militia and Defence....	49 64		
Intercolonial Railway	65 99		
Canadian Express Company	117 31		
Anglo-American Telegraph Company..	46 43		
Sidney Grey	45 87		
Judge Weatherbie	30 00		
Canadian Pacific Railway	4 77		
Minneapolis, St. Paul & Sault Ste.			
Marie Ry	10 83		
Wabash Railway	21 26		
New York, Chicago & St. Louis Ry...	1 54		
Boston & Maine Ry	3 00		
Suspense account	10 48		
	99,673 01		99,673 01

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Accountant and Auditor.

SESSIONAL PAPER No. 20

No. 10.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT OF AVERAGES—12 MONTHS ENDED MARCH 31, 1909.

Mileage of railway	267
Engine mileage	452,534
Total train mileage	334,982
Total car mileage	2,098,701
Ratio of earnings to gross earnings—	
Passenger	Per cent. 43·86
Freight	" 47·91
Mails and express	" 8·23
Gross earnings per mile of railway	Dollars. 1,165·99
" engine mile	Cents. 68·79
" train mile	" 92·94
" car mile	" 14·83
Ratio of expenses to gross earnings—	
Maintenance of way and structures	Per cent. 36·77
Maintenance of equipment	" 20·00
Traffic expenses	" 0·42
Transportation expenses	" 67·45
General expenses	" 3·95
Expenses per train mile—	
Maintenance of way and structures	Cents. 34·17
Maintenance of equipment	" 18·58
Traffic expenses	" 0·40
Transportation expenses	" 62·69
General expenses	" 3·67
Expenses per mile of railway—	
Maintenance of way and structures	Dollars. 428·74
Maintenance of equipment	" 233·15
Traffic expenses	" 4·92
Transportation expenses	" 786·50
General expenses	" 46·05
Locomotive and car repairs, per locomotive and car—	
Locomotives	" 772·48
Passenger cars	" 249·74
Freight cars	" 21·75

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CHARLOTTETOWN, P.E.I

W. T. HUGGAN,
Accountant and Auditor.

9-10 EDWARD VII., A. 1910

PRINCE EDWARD ISLAND RAILWAY.

STATEMENT OF RECEIPTS.

Months.	Passenger Traffic.	Freight Traffic.	Mails and Sundries.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1908—				
April	8,781 13	9,660 29	1,778 96	20,220 38
May	8,854 50	15,511 65	1,678 97	26,045 12
June	10,074 89	14,506 58	1,784 37	26,365 84
July	18,995 43	12,488 31	1,844 45	33,328 19
August	19,398 81	11,103 41	1,848 37	32,350 59
September	17,395 57	11,652 30	1,819 53	30,777 40
October	12,221 39	16,535 97	1,809 14	30,566 50
November	10,445 69	17,347 29	1,863 00	29,655 98
December	9,720 39	12,889 87	1,909 49	24,519 75
1909—				
January	7,329 02	8,252 65	3,237 95	18,819 62
February	5,684 30	8,046 51	2,986 24	16,717 05
March	7,722 92	11,155 78	3,074 51	21,953 21
1908-09	136,534 04	149,150 61	25,634 98	311,319 63
1907-08	132,382 76	146,280 99	25,916 08	304,579 83

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CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,

Accountant and Auditor

PRINCE EDWARD ISLAND RAILWAY.

PASSENGER STATEMENT.

Months.	Local.		Through.		Total.	
	Number.	Mileage.	Number.	Mileage.	Number.	Mileage.
1908—						
April	25,275	397,070	78	3,195	25,353	400,265
May	25,986	460,580	755	32,715	26,741	493,295
June	23,856	395,946	1,225	59,476	25,081	455,422
July	43,891	1,083,855	2,352	106,173	46,243	1,190,028
August	37,253	872,613	4,177	196,434	41,430	1,069,047
September	35,255	920,922	3,444	180,073	38,699	1,100,995
October	24,991	511,461	3,073	162,327	28,064	673,788
November	25,163	382,248	1,796	83,964	26,959	466,212
December	24,702	526,953	836	41,399	25,538	568,357
1909—						
January	17,928	406,659	189	9,422	18,117	416,081
February	12,909	329,990	117	6,137	13,026	336,127
March	17,192	391,506	315	14,944	17,507	406,450
1908-9	314,401	6,679,808	18,357	896,259	332,758	7,576,067
1907-8	300,817	6,653,262	17,011	804,196	317,828	7,457,458

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CHARLOTTETOWN, P.E.I.,

W. T. HUGGAN,

Accountant and Auditor.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

FREIGHT STATEMENT.

Months.	1908-09.		1907-08.	
	Tons.	Mileage.	Tons.	Mileage.
April.....	5,365	203,425	7,164	269,586
May.....	10,422	360,583	9,662	346,100
June.....	10,755	428,751	8,377	304,074
July.....	7,892	317,451	8,509	374,883
August.....	7,785	265,283	7,381	273,912
September.....	8,443	303,582	6,551	150,754
October.....	12,244	398,716	8,779	286,129
November.....	12,904	452,504	13,351	447,621
December.....	8,432	283,614	7,635	253,837
January.....	6,097	234,501	4,095	188,556
February.....	6,723	240,474	7,361	338,615
March.....	9,030	310,124	8,385	344,642
	106,090	3,790,008	97,250	3,578,759

E. and O. E.
 CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,
Accountant and Auditor.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

DESCRIPTIVE Statement of Freight Transported, Twelve Months ended March 31, 1909.

Products of.	Commodity.	Tons.
Agriculture.....	{ Grain.....	14,554
	{ Flour.....	4,461
	{ Other mill products.....	983
	{ Hay.....	1,725
	{ Tobacco.....	187
	{ Cotton.....	33
	{ Fruit and vegetables.....	5,086
Animals.....	{ Live stock.....	3,141
	{ Dressed meats.....	2,272
	{ Other packing house products.....	2,360
	{ Poultry, game and fish.....	3,048
	{ Wool.....	51
	{ Hides and leather.....	441
Mines.....	{ Anthracite coal.....	1,606
	{ Bituminous coal.....	7,029
	{ Stone, sand, and other like articles.....	4,885
Forest.....	Lumber.....	13,219
Manufactures.....	{ Petroleum and other oils.....	805
	{ Sugar.....	1,170
	{ Naval stores.....	7
	{ Iron, pig and bloom.....	457
	{ Iron and steel rails.....	451
	{ Other castings and machinery.....	821
	{ Bar and sheet metal.....	127
	{ Cement, brick and lime.....	1,614
	{ Agricultural implements.....	471
	{ Wagons, carriages, tools, etc.....	263
Miscellaneous.....	{ Wines, liquors and beers.....	424
	{ Household goods and furniture.....	428
	{ Other commodities not mentioned.....	33,966
		106,090

E. & O. E.,
CHARLOTTETOWN, P.E.I.

W. T. HUGGAN,
Accountant and Auditor.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

OFFICE OF THE CHIEF ENGINEER.

MONCTON, N.B., June 1, 1909.

SIR.—I have the honour to submit the following report on capital account expenditure for the fiscal year ending March 31, 1909.

Increased accommodation at Charlottetown—

The erecting, machine and blacksmith shop was completed and heating plant and machinery installed.

The new brick freight-shed and offices were completed, and the existing wooden freight-sheds were moved to a new location and remodelled.

An 80,000 gallon water tank was built and the pipe line for the new water service was completed. A stand pipe and fire hydrants, in connection with the water service were erected.

A concrete and brick power-house was built and equipped with three 250 horse-power boilers, steam-feed pump, heater, generator, &c.

A 125-foot brick chimney was also completed.

The work in connection with the railway wharf was carried on during the year.

The old car-shop was remodelled and converted into a paint-shop.

The store building was removed from its old foundation and placed on Water St.

One hundred and fifty feet of new fence was erected on Water street.

A room was provided in the freight-shed for bonded goods.

Weigh scales were provided for inward freight. Scales were also provided for the baggage-room.

A new wooden platform was built at the station.

Two loading platforms were erected in the yard for handling coal and other material.

Progress was made in connection with the rearrangement of the yard, and the following sidings put in :—

	Feet.
Siding for paint-shop..	144
Siding for machine-shop..	600
Siding for cattle pen..	80

One improved Gould-Tisdale electric semaphore was installed in the yard, for train order signals.

The new shops were wired for electric lighting.

Branch line, Harmony to Elmira—

This line was located, plans and specification prepared and tenders asked.

Hillsboro' Bridge, to pay M. J. Haney on his contract, amount of award—

The amount of the award, viz., \$164,633.33 was paid.

Extension to Wharf at Souris—

The extension to the wharf was completed. The freight-house was also extended.

Increased accommodation and facilities along the line—

Caretaker's stations were provided at the following places :—

St. Nicholas, Portage, West Devon, McNeil's Mills, Perth, Selkirk and Belle river.

A siding was put in at Douglas.

9-10 EDWARD VII., A. 1910

Spur line and ballast pit—

A spur line and 'Y' were built and a ballast pit purchased at Surrey.

Rolling stock—

For details of this appropriation see report of G. A. Sharp, superintendent of Prince Edward Island Railway.

New machinery—

For details of this appropriation see report of G. A. Sharp, superintendent of Prince Edward Island Railway.

Steel rails—

For details see report of G. A. Sharp, superintendent of Prince Edward Island Railway.

Land purchase—

This appropriation was to pay legal expenses in connection with the purchase of right of way for the Murray harbour and Montague branches, which was done.

Survey of branch lines: Montague to a point on the Murray Harbour Branch; alternate routes from a point on the main line to New London, and from Stanhope to the main line at Royalty Junction, or Mount Stewart, or an intermediate point.

Surveys were made along the north shore, between Kensington and Bedford, and between Montague and Murray river, also between Montague and Kinross.

I have the honour to be, sir,

Your obedient servant,

WM. B. MACKENZIE,
Chief Engineer.

D. POTTINGER, Esq., I.S.O.,
Member Govt. Railways Managing Board,
Moncton, N.B.

PRINCE EDWARD ISLAND RAILWAY.

OFFICE OF THE MECHANICAL SUPERINTENDENT,

CHARLOTTETOWN, P.E.I., April 21, 1909.

G. A. SHARP, Esq.,
Superintendent, P.E.I. Railway.

SIR,—I beg to submit for your information the following statement of the operation of the Mechanical Department for the year ended March 31, 1909.

The following is a summary of the principal work performed :—

LOCOMOTIVES.

Ten locomotives received heavy repairs. Six received new side and main rod brasses, new driving boxes, new engine truck boxes and brasses, all the motion and running gear thoroughly repaired, stay-bolts in boilers thoroughly examined, and about 700 new stay-bolts put in boilers.

Eight locomotives received specific repairs.

Six engines received new pistons and piston rods, and new driving boxes. One set of cylinders were bored out, motion and mountings in cab thoroughly repaired and a great deal renewed. Six new cross-heads were made, and 28 lined with tin and planed.

SESSIONAL PAPER No. 20

Four new whistles, six pop valves, six new boiler checks, 350 sets metallic packing, sixty new grease cups, eight new driving boxes, twenty sets new side rod brasses, twelve locomotive smokestacks, twenty-four smoke jacks for Round Houses, eight new valve stems and sixteen sets of engine truck brasses were made. Two piston rods were broken which caused the breakage of two cylinders, and one engine frame was also broken which was repaired. Six tender tanks and tender frames were largely repaired. One hundred and two driving springs and six injectors were largely rebuilt. Four sets of driving wheel tires were turned and put on wheel centres. Three hundred and fifty car wheels were bored out and pressed on axles, 250 axles, sixty sets of thirty-three-inch steel tired wheels, twenty-two pairs of driving wheels, and twenty-eight pairs of engine truck wheels were turned. Seven hundred tubes were pieced and put in locomotives. Twenty-seven thousand two hundred and forty-seven pounds of iron, and nine hundred and twenty pounds of steel were forged: 3,777 pounds of nuts were tapped, and we have done a great deal of running repairs.

CAR DEPARTMENT.

Forty-two box cars were built and equipped with all the latest improvements of the Westinghouse brake, and charged to capital. One second-class car, one van, and three platform cars have been rebuilt during the year, and charged to renewals. Six locomotives cabs were largely rebuilt, and ten new engine pilots were built. Five first-class cars, five second-class cars, one van, two postals, twenty box cars, thirty platform cars, three flangers, and four snow-ploughs received heavy repairs, and sixteen box cars had new cotton duck roofs put on.

BRASS FOUNDRY.

Seven hundred and fifty car bushes, fourteen sets of engine-driving brasses, and eight sets of side and main rod brasses were made, making a total of 13,472 pounds of brass castings, besides one hundred and seventy battery zines and forty hangers.

PAINT SHOP.

Six first-class cars were painted, and four cleaned and varnished, five second-class cars were painted, and four cleaned and varnished, five baggage and postal cars were painted, and two cleaned and varnished. Forty-eight box cars, seventy-eight box car roofs, fifteen flat cars, four snow-ploughs, one flanger, and twelve hand cars were painted, and 1,300 panes of glass put in buildings.

Our shop painters have done a great deal of work on stations, agents' dwellings, switch frames and targets for the road department.

ROAD AND TRAFFIC DEPARTMENT.

Thirty-four loading platforms, two gates, four freight trucks, three cattle stages, six hand cars, one grindstone stand, four boxes, two baggage tanks, one letter case, two clip boards, one door, one cash-drawer, five desks, two cases of drawers for engineer's office, and three press stands for offices were made, and three station seats were repaired. Thirteen hand cars, five freight trucks, six chairs and two conductors' cupboards, were largely rebuilt. Eight ratchet frames, four lining bars, twelve switch rods, eight pairs heavy hangers, five claw bars, two blind switches and rods, six track lifters, and seven sets of switch gear were made, and seven frogs largely repaired.

This has been the busiest year in the history of the mechanical department. We have had to move out of our old quarters, and install the old and new machinery in the new shops, besides piping those shops for compressed air and steam for running our power in the winter. We also dismantled two old locomotives and utilized the boilers for heating the shops during the winter, which of course necessitated a great deal of extra work. By persistent efforts, I am pleased to say, we have kept the rolling

9-10 EDWARD VII., A. 1910

stock in a high state of efficiency, and equipped with all modern appliances such as the Westinghouse air-brake, steam heat and M.C.B. couplers.

I am also pleased to report that our new shops are the finest for their size in the maritime provinces, and when we have them all finished and our electric motors installed, they will be a credit to the province, and to the department which so generously provided money for the requirements of an up to date plant.

I have the honour to be, sir,
Your obedient servant,

W. S. POOLE,
Mechanical Superintendent.

G. A. SHARP, Esq.,
Superintendent, P.E.I. Railway.

A.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT Showing the Number of Locomotives and the Various Classes of Cars and other Rolling Stock on March 31, 1909.

	CLASSIFICATION OF CARS.													Total.	Snow Ploughs.	Flangers.	Total.
	Locomotives.	1st Class.	2nd Class.	Combined 2nd and Baggage.	Postal and Smoking.	Combined Postal and Baggage.	Baggage.	Pay Car.	Vans.	Box Freight.	Refrigerator Cars.	Stock.	Coal.	Platform.			
On hand, serviceable, March 31, 1908.....	31	23	11	5	4	3	4	1	2	271	3	21	22	114	514	9	9 18
Condemned, April 1, 1908			1	2		1	2		2					3	11	1	1
Total equipment, April 1, 1908.	31	23	12	7	4	4	6	1	4	271	3	21	22	147	525	10	9 19
Built during fiscal year ended March 31, 1909, and charged to capital account.....										42					42		
Total equipment at March 31, 1909....	31	23	12	7	4	4	6	1	4	313	3	21	22	147	567	10	9 19
Condemned, April 1, 1908.....			1	2		1	2		2					3	11	1	1
Condemned during the year.....														9	9		
Total condemned.....			1	2		1	2		2					12	20	1	1
Less rebuilt during the year.....			1						1					3	5		
To be rebuilt.....				2		1	2		1					9	15	1	1
Add serviceable and repairing.....	31	23	12	5	4	3	4	1	3	313	3	21	22	138	552	9	9 18
Total equipment, March 31, 1909.....	31	23	12	7	4	4	6	1	4	313	3	21	22	147	567	10	9 19

S. F. HODGSON,
Mechanical Accountant.

CHARLOTTETOWN, March 31, 1909.

SESSIONAL PAPER No. 20

B.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT of Mileage made, and Coal, Oil and Waste Consumed by the Locomotives for the Year ended March 31, 1909.

MONTHS.	Locomotive Mileage.	CONSUMPTION.				AVERAGE CONSUMPTION PER 100 MILES.			
		Tons of Coal.	Pints of Valve Oil.	Pints of Engine Oil.	Pounds of Waste.	Pounds of Coal.	Pints of Valve Oil.	Pints of Engine Oil.	Pounds of Waste.
1908.									
April	32,504	818	428	1,000	539	5,637	1 31	3 08	1 65
May	36,793	895	524	1,284	616	5,419	1 42	3 49	1 67
June	38,237	929	488	1,376	630	5,412	1 27	3 60	1 64
July	46,814	1,095	796	1,924	732	5,239	1 70	4 11	1 56
August	47,097	1,145	784	1,771	671	5,445	1 66	3 76	1 42
September	47,990	1,283	680	1,732	791	5,988	1 41	3 61	1 65
October	43,017	1,209	592	1,412	615	6,295	1 37	3 28	1 49
November	42,163	1,188	621	1,454	698	6,312	1 48	3 41	1 65
December	40,610	1,112	620	1,332	799	6,133	1 52	3 28	1 96
1909.									
January	32,962	976	476	1,156	529	6,632	1 44	3 50	1 60
February	31,180	877	400	1,048	556	6,300	1 28	3 36	1 78
March	34,704	977	520	1,132	592	6,306	1 49	3 26	1 70
Totals ..	474,071	12,504	6,932	16,621	7,801	5,968	1 46	3 50	1 64

CHARLOTTETOWN, March 31, 1909.

S. F. HODGSON,

Mechanical Accountant.

9-10 EDWARD VII., A. 1910

PRINCE EDWARD ISLAND RAILWAY.

DETAILS of Accidents for the Period ending March 31, 1908.

Date.	Name, Address and Occupation of Persons.	Place of Accident.	Cause.	Nature and Extent of Injury.
1908.				
April 22.	Charles Bradley, Grandview, section foreman.	Grandview.	Lifting hand-car on track.	Back sprained.
" 25.	T. L. Aitken, Charlottetown, carpenter.	Charlottetown.	Moving hand-car.	Hand bruised.
" 27.	David Birt, Vernon River, section foreman.	Vernon River.	Getting on hand-car.	Hip injured.
May 15.	Russell Beer, Charlottetown, apprentice.	Charlottetown.	Working on lathes; wrench slipped.	Wrist sprained.
" 23.	Fenton Higgins, Charlottetown, cleaner.	"	Working in shop; hand caught in tackle block.	Finger injured.
" 25.	Joshua Carmody, Charlottetown, car inspector.	"	Foot caught between rails.	Ankle bruised.
" 25.	S. McEachern, Douglas, section man.	Douglas.	Track jack slipped from under rail.	Ribs fractured.
June 8.	Robert Arthur, Summerside, section man.	Summerside.	Drawing spike out of sleeper; claw bar slipped.	Finger broken.
" 24.	Frank Gillis, Cape Traverse, cleaner.	Cape Traverse.	Fell into pit in engine house.	Shoulder dislocated.
July 28.	Fenton J. Higgins, Charlottetown, fireman.	Charlottetown.	Finger caught in stationary engine.	Finger cut.
Aug. 7.	Hector McLeod, Charlottetown, fitter's helper.	"	Finger cut with piece rusty iron.	"
" 11.	Alfred W. Scaman, Hunter River.	Kensington.	Jumped off train while in motion.	Fatal.
Sept. 3.	Parker Moore, Charlottetown, machinist.	Charlottetown.	Working on engine tender truck.	Fingers severed.
" 3.	John Hannah, Charlottetown, labourer.	"	Thumb caught in track jack.	Thumb bruised.
" 7.	John Stewart, Georgetown, brakeman.	Montague.	Coupling cars.	Neck sprained.
" 11.	Thos. Renton, Georgetown, fireman.	Georgetown.	Struck knee with shovel while working in engine.	Knee bruised.
" 24.	Malcolm McCallum, Charlottetown, labourer.	Charlottetown.	Plank fell on toe.	Toe bruised.
" 26.	Joseph O'Reilly, Charlottetown, brakeman.	Hunter River.	Trunk fell on leg.	Leg cut.
Oct. 16.	Russell Beer, Charlottetown, apprentice.	Charlottetown.	Moving machinery.	Toe crushed.
" 20.	William Harris, Charlottetown, brakeman.	"	Fell while passing between engine and car.	Back injured and ankle bruised.
" 20.	Gordon Worth, Charlottetown, fireman.	Souris.	Back hurt on side of cab.	Back injured.
" 24.	Jos. P. Murphy, Conway, section man.	Portage.	Leg struck with spike while driving same.	Leg bruised.
" 28.	Ernest Parquharson, Charlottetown, brakeman.	Charlottetown.	Fell while uncoupling cars.	Fingers severed.
Nov. 18.	Peter C. Gallant, St. Louis, section man.	St. Louis.	Putting in switch ties; foot caught under rail.	Foot bruised.
Dec. 14.	Parker Moore, Charlottetown, machinist.	Bloomfield.	Knee injured clearing wreck.	Knee sprained.
" 21.	Charles Johnson, Georgetown, cleaner.	Georgetown.	Slipped coming out of coal shed.	Ankle sprained.
" 28.	Arthur J. Harper, Charlottetown, brakeman.	Charlottetown.	Coupling cars.	Thumb bruised.
1909.				
Jan. 6.	Frederick Egan, Charlottetown, janitor.	"	Attending furnace.	Thumbs bruised; blood poisoning.
" 8.	James Revell, Charlottetown, fireman.	Souris.	Fell over rail.	Rib fractured.
" 16.	A. J. McLaine, Charlottetown, engine driver.	Georgetown.	Fell while getting off tender.	Wrist sprained.
" 19.	Peter Pincau, Howlan, section man.	Howlan.	Slipped off sleeper.	Leg sprained.
" 29.	J. A. Cameron, Charlottetown, boiler maker.	Charlottetown.	Hand cut on boiler plate.	Blood poisoning.
Feb. 9.	Murdoch McKenzie, Charlottetown, labourer.	"	Fell in pit in car shop.	Ribs injured.
" 11.	John S. Power, Charlottetown, brakeman.	Travellers' Rest.	Finger injured unloading freight.	Finger bruised.
Mar. 8.	Bert Paquet, Charlottetown, fireman.	Charlottetown.	Fell in pit in engine house.	Back injured.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

ACCIDENTS DURING PERIOD ENDED MARCH 31, 1909.

Cause of Accident.	Passengers.		Employees.		Others.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1. Fell from cars or engine				1				1
2. Jumping on or off trains or engines while in motion	1						1	
3. At work on or near the track making up trains				1				1
4. Putting arms or heads out of windows				3				3
5. Coupling cars								
6. Collisions or by trains thrown from tracks								
7. Struck by engines or cars on highway crossings								
8. Walking, standing, lying, sitting or being on track				9				9
9. Explosions								
10. Striking bridges				20				20
11. Other causes								
Total	1			34			1	34

Charlottetown, P.E.I., May 20, 1909.

INTERCOLONIAL AND PRINCE EDWARD ISLAND RAILWAYS EMPLOYEES' PROVIDENT FUND.

SECOND ANNUAL REPORT.

MONCTON, N.B., May 28, 1909.

To all officers and employees, contributors to the above fund.

GENTLEMEN:

By instructions of the Board, we beg to submit for your information, the following report of the operations of the Provident Fund, for the fiscal year ended March 31, 1909.

The personnel of the board for that year, was as follows—

D. POTTINGER, General manager, Chairman.	
W. A. DUBÊ, Superintendent, Lévis.	} Appointed by the Minister.
T. C. BURPEE, Engineer of Maintenance, Moncton.	
J. W. NAIRN, Engineman, Truro.	} Elected by the Employees.
W. MILLEDGE THOMPSON, Conductor, Moncton.	

The board met quarterly during the year, according to the provisions of the rules and regulations.

The following statement will show the number of employees who have been retired since the provident fund went into operation, and also the number retired during the fiscal year ended March 31, 1909, and who have been paid retiring allowances during that year.

The applications of two others were also approved, but as they were not paid anything on account of retiring allowance until after the end of the year, their names have not been included.

9-10 EDWARD VII., A. 1910

The statement below shows the number of deaths up to the end of the fiscal year, and the number who were on the retired list on the same date:

Number retired to March 31, 1908.. . . .	142
Number retired during year ended March 31, 1909, and who were paid allowances during the year.. . . .	88
Total number.. . . .	230
Number died March 31, 1908.. . . .	11
Number died during year ended March 31, 1909.. . . .	17
Total.. . . .	28
Number on list March 31, 1909.. . . .	202

The following is a statement of the receipts and expenditures, during the year ended March 31, 1909:

Credit balance on March 31, 1908.. . . .	\$139,249 21
The contributions made by employees during the year amounted to.. . . .	\$75,306 41
The contributions made by the Railways dur- ing the same period.. . . .	75,306 41
Amounts received for refunds, &c.. . . .	30 32
	150,643 14
Interest on monthly balances.. . . .	5,227 88
Total.. . . .	295,120 23

The expenditures were:—

For retiring allowances.. . . .	64,067 63
Contributions refunded in the cases of deceased employees.. . . .	560 07
Contributions refunded, which were deducted in error.. . . .	223 96
Medical examinations, employees entering service.. . . .	843 00
Medical examinations, employees retiring from the service.. . . .	78 00
Election Expenses.. . . .	312 14
Salaries and travelling expenses, secretary's office.. . . .	2,092 17
Wages and travelling expenses, Board Members.. . . .	54 50
Stationery, printing, &c.. . . .	990 45
	69,221 92

Credit Balance, March 31, 1909.. . . . \$225,898 31

It might be stated, in connection with the credit balance, which is above shown, that the amount which will be required to pay retiring allowances for the next year will show a very heavy increase, due to the large number of employees who will probably be retired from the service and placed on the provident fund.

As required by the Act, an election for the two members of the board was held in February, 1909, Messrs. Nairn and Thompson being re-elected for another year.

The personnel of the board for the year ending March, 31, 1910, will therefore be the same as last year, and as is printed above.

D. POTTINGER.

*Member, Government Railways Managing Board.
Chairman.*

W. C. PAVER.

Acting Secretary.

PART IV

REPORT OF THE GOVERNMENT CHIEF ENGINEER
OF THE WESTERN DIVISION OF THE
NATIONAL TRANSCONTINENTAL
RAILWAY

MR. COLLINGWOOD SCHREIBER, C.M.G.

The Honourable GEORGE P. GRAHAM,
Minister of Railways and Canals,
Ottawa, Ont.

OTTAWA, April 7, 1909.

SIR.—I have the honour to submit my annual report upon the progress made with the construction of the western division of the National Transcontinental Railway (Grand Trunk Pacific Railway) up to the close of the fiscal year ended March 31, 1909.

This western division of the road, as is well known is divided into two sections: The one designated 'the Prairie section,' extending from the city of Winnipeg west-erly to Wolf creek, a distance of 915 miles; the other designated 'the Mountain section,' commencing at Wolf creek and terminating at Prince Rupert, on the Prairie coast, a distance of about 836 miles, the whole division being about 1,752 miles in length.

As I have stated on former occasions great care has been taken with the location throughout to obtain the best possible alignment with easy curves and grades.

On the prairie section there are no curves over 3° , except in the city of Edmonton, where on the loop line through the city, there are two curves of 10° , one of 8° , two of $6^{\circ}05''$ and one of 5° , and at the point where the railway leaves Winnipeg where there is one curve of 6° . The maximum grade throughout the whole section is $\frac{1}{10}$ of one per cent against the traffic moving east and $\frac{1}{10}$ of one per cent against the west-bound traffic.

On the 'Mountain Section' the maximum curve according to the trial location survey is 6° , the maximum grade against the traffic moving east is $\frac{1}{10}$ of one per cent, excepting one grade of 20 miles in length, which is one per cent, and against the traffic moving west the maximum grade is $\frac{1}{10}$ of one per cent.

These features will place the Transcontinental in a position as regards the cost of transportation, which so far as I am aware, no other railways across the continent enjoy. It was of course, to be borne in mind that against this advantage must be offset to some extent the increase fixed charges entailed.

I may observe, as being a special feature of advantage from the point of view of economical and expeditious operation, that the harbour of Prince Rupert is very extensive and well sheltered, with a depth of water flush up to the docks sufficient to float a man of war, and the anchorage as I learned upon inquiry upon the occasion of my visit to Prince Rupert last summer, is very good.

PRAIRIE SECTION.

Construction.

Out of the total of 915 miles which constitute the Prairie Section, 861 miles are graded and bridged, and the track has been laid for a distance of 697 miles, of which 92 miles have been fully ballasted; 90 miles have had two lifts of ballast put under it, and 414 miles have received one lift of ballast, leaving 101 miles of skeleton track.

So soon as the working season opens I understand the work of track-laying and ballasting will be proceeded with vigorously, and by the time the track reaches the 861st mile (50 miles west of Edmonton), the grading and bridging on the last 55 miles to Wolf creek will be completed; considerable work having already been done upon it, so as to allow the tracklaying to proceed without interruption.

There are ties enough in stock to complete the track-laying on this section, but not sufficient rails. However the Grand Trunk Pacific Railway officials inform me

9-10 EDWARD VII., A. 1910

that the balance of rails will come forward promptly upon the opening of lake navigation.

During the season of 1909 the work of ballasting will be proceeded with energetically so as to place the entire 'Prairie Section' in condition for public traffic before its close.

As you have already been informed, the section of the railway extending from Winnipeg to Wainwright, a distance of 667 miles, has been under public traffic since September 21, 1908, by the permission of the Railway Commissioners.

The right of way and station grounds have been inclosed by a fence for a distance of 340 miles, and 9,000 panels of snow fencing has been built.

There are sufficient fence posts in stock for an additional 445 miles.

The telegraph line has been erected from Winnipeg to Battle River bridge, a distance of 675 miles.

The following mentioned buildings and water stations have been erected :—

	Built.	In course of erection.
Station houses.. . . .	5	—
Portable station houses.. . . .	7	Nil.
Freight-houses.. . . .	1	Nil.
Machine shops.. . . .	2	Nil.
Water stations.. . . .	16	19
Loading platforms.. . . .	52	19
Store-houses.. . . .	Nil	1
Blacksmith shops.. . . .	Nil.	1
Sand houses.. . . .	Nil.	5
Section-houses.. . . .	33	Nil.
Tool-houses.. . . .	34	Nil.
Bunk-houses.. . . .	50	Nil.
Engine-houses.. . . .	5	Nil.

The culverts, trestle and pile bridges are well designed and substantial structures, built of approved sound timber.

There are nine steel bridges, viz.:—

- 1 over the Assiniboine river at Winnipeg.
- 2 over the Assiniboine river 11 miles east of Portage la Prairie.
- 3 over the Assiniboine river at St. Lazare.
- 4 Overhead crossing of Canadian Pacific Railway at Arrow river.
- 5 over the South Saskatchewan river.
- 6 over the Eagle river.
- 7 over the Battle river.
- 8 over the North Saskatchewan river.
- 9 over the Pembina river.

All but Nos. 1, 6 and 9 are erected. The four most important of these structures are Nos. 5, 7, 8 and 9.

- No. 5 1,501 feet in length and 74 feet in height.
- No. 7 is 2,772 feet in length and 178 feet in height.
- No. 8 is 665 feet in length and 136 feet in height.
- No. 9 is 820 feet in length and 200 feet in height.

The substructure of this last named bridge will very shortly be completed. The cost of these four steel bridges will amount to over \$1,750,000.

It may interest you to learn that the work involved in the grading of the road will exceed 27,000 cubic yards to the mile of which over 15 per cent is loose and solid rock.

The slipping of the hill sides at Miniota and along the Qu'Appelle valley, as well as on the hill side at Wabamun lake, where the railway is built on the sidelong ground, have given considerable trouble by causing movement of the railway embank-

SESSIONAL PAPER No. 20

ment and the crushing of some culverts, entailing considerable expense in maintaining them. However, by the adoption of under-drainage and other methods it is expected that the movement of these side hills will be stopped.

If the expressed expectations of the officials of the Grand Trunk Pacific Railway Company are realized, the construction of the 'Prairie Section' will be completed this year.

The expenditure on this section up to March 31, 1909,	
for material delivered and works executed is...	\$25,814,377 93
Net interest on bonds...	1,099,556 66
Total...	\$26,913,934 59

The estimated cost of the 'Prairie Section' including interest on bonds, is placed at \$33,007,449.

It will be observed that the cost of construction far exceeds the original estimate of cost made before the contract was entered into. This is very largely due to the weight of rail used being 80 lbs. to the yard instead of 65 lbs. to the yard, a difference of 23 tons per mile, also to the increased cost of steel rails. The market price in the year 1903 being \$25.25 per gross ton, whereas, in the years 1906-7 the price including duty had increased to \$36.59 per gross ton, there being no duty on steel rails in 1903. The price of ties also advanced in price from about \$0.25 and \$0.30 each in 1903 to \$0.50, \$0.60 and \$0.75 in 1906 and 1907. Timber also rose in price from \$30 and \$32 per m. ft. B.M. in 1903 to \$35 and \$40 per m. ft. B.M. in 1906, and 1907. Wages of ordinary labour in the west were \$1.25, \$1.50 to \$1.75 per day in 1903, whereas the wages had increased to \$2, \$2.25 and \$2.50 per day in 1906 and 1907, and even at that rate of wage, a sufficient force could not be obtained to carry on the work as rapidly as was desired.

I think that upon investigation you will find these statements as regards the advance of prices since the estimate was made in the year 1903 can be fully verified.

MOUNTAIN SECTION

When I submitted my last annual report, the Grand Trunk Pacific Railway Company had filed plans and profiles of final revised location for 230 miles from Wolf creek westerly, and for 100 miles from Prince Rupert easterly, leaving a gap of 506 miles for which the plans and profiles of final revision had not been received. I therefore, when called upon during the fiscal year just closed to give an estimate of cost of this section, had but very meagre information before me upon which to base an estimate. I, however, did the best I could with the plans and profiles of the 310 miles of revised location before me together with the information given by the trial location survey of the balance of the distance 506 miles, estimating the cost of construction, including \$5,336,000 of interest on bonds at \$67,056,000 which I think should cover the cost. No further plans and profiles of location have been submitted for approval up to March 31, 1909.

Messrs. Foley, Welsh & Stewart have the contract to build the first 100 miles from Prince Rupert easterly. The contract dated March 19, 1908, calls for the completion of this work next autumn.

They have executed within the last twelve months the following:—

Earth excavation...	cubic yards.	135,094
Loose rock excavation...	"	193,102
Solid rock...	"	1,056,794
Timber in culverts...	lineal feet.	74,579
Timber in protection cribs...	"	74,000
Stone filling in protection cribs...	cubic yards.	4,680

9-10 EDWARD VII., A. 1910

In addition to the above the Grand Trunk Pacific Railway Company have built a large wharf and warehouse at Prince Rupert.

The expenditure on the mountain section up to March 31, 1909, amounts to \$3,768.825.90.

I may observe that on the western division the government have four inspecting engineers overseeing the work.

Mr. G. L. Law is located in Winnipeg, prairie section.

Mr. Martin Murphy is located at Edmonton, prairie section.

Mr. E. H. Pierce is located at Port Essington, mountain section.

Mr. Arthur L. Ford is located at Prince Rupert, mountain section.

Until the autumn of 1908, Mr. William McCarthy, a very industrious and trustworthy engineer was located at Prince Rupert, but owing to a very serious illness he had to retire from the service, and Mr. Ford, who was located at Winnipeg was transferred to Prince Rupert, and Mr. Law appointed to the vacancy at Winnipeg. They all appear to be men of ability and probity, showing great interest in their work, and being sedulous in the discharge of their duty.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) COLLINGWOOD SCHREIBER,

General Consulting Engineer to the Government

and Chief Engineer of Western Division of N.T.Ry.

PART V

PROGRESS REPORT

ON

HUDSON BAY RAILWAY SURVEYS

BY

MR. JOHN ARMSTRONG

CHIEF ENGINEER

HUDSON BAY RAILWAY SURVEYS.

ENGINEER'S OFFICE.

WINNIPEG, MAN., February 15, 1909.

M. J. BUTLER, Esq.,

Deputy Minister, Department of Railways and Canals,
Ottawa.

DEAR SIR,—Hereto attached, I beg to furnish a progress report of the work accomplished to date February 1, on the Hudson Bay Railway Surveys, which have been carried out under my charge in accordance with your letter of general instructions, dated July 10, 1908.

The estimate I have made of the cost is for a road of such a standard as will serve to satisfactorily handle the traffic to the bay for a period of from seven to ten years, by which time the usefulness of the Hudson Bay route as a means of access to European ports will have been fully tested.

Until the success of the route has been proven it would probably be unwise to build an expensive line to the bay, and in accordance with this view a cheaper standard of road has been estimated for than would otherwise be adopted.

Sixty-pound rails should give good service for their probable life, as should also wooden culverts and trestles. If the route should prove successful, these rails and wooden structures can then be replaced by heavier rails, concrete culverts and steel bridges, and the road brought up to the necessary standard to carry the traffic then offering, even if the sea route is not found successful, the road can be then permanently laid out to take care of the local traffic which may have been developed along the line and in the bay itself.

The surveys are not yet completed, the estimates being based upon reports of some 320 miles of line run out of an estimated total distance of 465 miles from The Pas to Churchill. In addition to these, there are reports from the engineers, in regard of exploration work covering about 400 miles. These plans and profiles are not continuous, but are from different parties located on different sections between The Pas and Churchill, thus giving a sample of the character of the work over the whole line.

The only item which may require revision on receiving the results of the completed surveys will be grading. Such items as track, stations, water tanks, &c., will not be materially affected.

The remarks made upon harbours are not based on our own surveys, but are taken from various reports issued by the Department of the Interior, and on information supplied by Hudson Bay Company officers.

No attempt has been made to closely estimate the probable cost of the necessary terminal improvements at the Hudson Bay port. Probably five or six million dollars would cover the primary improvements necessary at Churchill, extensions being made, from time to time, as the needs of traffic warrant, making a total of \$17,000,000 or \$18,000,000 for the initial cost of a railway from The Pas to Fort Churchill with a sufficient provision of terminal facilities to handle the traffic for the first few years.

It is not likely that the gross sum required for the line to Nelson would differ greatly from that required for the Churchill line, as the probable greater cost of improving Port Nelson would be counterbalanced by the smaller sum required for the railway construction.

The latest reports from the engineers in the field, dated January 15, 1909, indicate very satisfactory progress under somewhat trying circumstances, the temperature ranging from thirty to fifty below zero, and somewhat interfering with the progress

9-10 EDWARD VII., A. 1910

of the work. However, unless some more serious obstacle arises, there should be a through line of location from The Pas to Churchill between March 1 and 15th next. In addition to this, information will be available as to the possibility of avoiding some of the heavier work encountered on the line run.

The health of the parties has been generally good, a few light frost bites and some slight axe wounds being the most serious mishaps reported to date.

Yours truly,

JOHN ARMSTRONG,
Chief Engineer.

PROGRESS REPORT.

Timber.—The first forty miles northward from The Pas has not much timber along the line surveyed, but a considerable amount along the shores of Cormorant lake on the west, and Moose lake on the east will be tributary to the line. From Moose lake north, and down the valley of the Mitishto river to Setting lake some considerable areas of very fine white spruce are passed through. Down the Grass river, especially near the northern end, some especially fine timber is met with. Some more scattered areas of fair timber are found between Split lake and the mouth of the Little Churchill.

A rough estimate of the timber actually encountered places the amount at 250 to 300 million feet of logs. An exploration further up the streams away from the proposed railway route would probably increase this estimate considerably. In addition to this timber, there is also a large quantity of pulpwood and tie timber. Along the streams, plenty of timber suitable for ties has been found almost to Churchill. Down the Nelson river from Split lake the timber covers the whole country all the way down to Port Nelson.

The last hundred miles towards Churchill is practically an open barren, possessing neither timber or soil, and is probably frozen within a few inches of the surface all the year around.

Agricultural Lands.—Considerable areas of good lands are met with along the Mitishto and Grass rivers as far north as Split lake, and from that point northeasterly along both sides of the Nelson river to Port Nelson.

North of Split lake towards Fort Churchill land suitable for agriculture does not occur, except in a few very small detached pieces along the shores of streams and lakes. None of these lands are likely to attract much settlement in the near future, as they are thickly covered with timber and mostly all requiring more or less draining.

Minerals.—From The Pas northward, for the first forty or fifty miles good limestone suitable for quarrying can be found at many points, and would probably be the source of supply for the province of Saskatchewan, and would undoubtedly furnish considerable revenue to the railway.

Northward from this, the rock is usually Huronian, and although no deposits of value have been found, highly mineralized specimens have been picked up at many points. If the country is opened up by a railway and made accessible to professional prospectors minerals of value may be found.

On the east coast of Hudson Bay Dr. Robert Bell discovered good anthracite coal on Long island, and bituminous coal has been discovered at Mansfield island at the western entrance to Hudson Strait. The extent of these coal deposits has not yet been determined.

Fish and Game.—All the lakes throughout the country abound in fish, the principal one being the whitefish. The Hudson Bay cod, sea bass and salmon have been found, but have not been fished enough to determine to what extent they exist. Whaling and seal fishing are carried on largely in the waters of the bay.

SESSIONAL PAPER No. 20

All kinds of fur-bearing animals are found throughout the country. Moose are found plentifully between The Pas and Split lake and the barren land cariboo are plentiful during the winter south of Churchill.

Streams and Waterways.—The whole country south of Split lake is full of rivers and lakes, giving good communication with the railway line for the carrying on of lumbering and other industries which may be established in the future.

Water-power is abundant on all the streams: many affording opportunities for development at a minimum cost. North of Split lake the streams of chief importance to the railway are the Little Churchill river, and further north the Deer river. Neither of these is a large stream but they furnish convenient canoe or boat routes for the transportation of supplies.

The Churchill river, although a very large river, is not very useful as a transport route, except for a short distance near the mouth. The current is very strong, and the river is full of rapids and falls. It is very seldom travelled, even down stream. Probably great power might be developed from it, if required. If the electrification of the railway line were ever taken up, the Churchill would be a convenient and cheap source of power for the northern division.

The Nelson river may be described as one of the great rivers of the world in regard of the volume of water discharged into the sea. Its length from Lake Winnipeg to the sea at Port Nelson is approximately four hundred miles. From the west it drains its waters from the summit of the Rocky mountains through the north and south Saskatchewan rivers and their branches. All the waters of the province of Manitoba are discharged through it, and it also drains an immense area of North Dakota, Minnesota and western Ontario through the Red river and the Winnipeg river, reaching almost to Lake Superior, through the Lake of the Woods and Rainy river. Its discharge has been roughly estimated by Dr. Bell as about five times that of the Ottawa river at the Chaudière Falls at Ottawa.

Dr. Bell in his examination of the river took many soundings of the river, and found from twenty to sixty feet of water over a great portion of the way; the current in much of the length of the river not exceeding two to three miles per hour. Of course these soundings are not continuous, but serve to show that the river is generally deep. Lake Winnipeg furnishes an extension of this water route to within twenty-five miles of Winnipeg city. From the information obtainable, it would seem that a canal might be built along the Nelson river which would enable ocean-going vessels to enter Lake Winnipeg, where a good channel the minimum depth of which is 33 feet already exists extending to the south end of the lake. It can readily be seen the immense advantage that the western provinces and states would gain if ocean cargoes could be loaded at Winnipeg and taken through unbroken to Liverpool and other European ports. A comparison with some of the Georgian Bay canal points will prove interesting.

From Georgian bay to the summit, the rise is about 100 feet, and from the summit to Montreal harbour the fall is about 660 feet, or a total waterfall to be overcome of 760 feet in about 440 miles.

The fall from Lake Winnipeg to Hudson bay is about 710 feet in 400 miles. The Georgian Bay canal passes over a summit probably necessitating the construction of extensive storage works, while the Nelson River canal would have the full flow of the Nelson river, five times that of the Ottawa river at Chaudière falls, from Lake Winnipeg to Hudson bay. No information is at hand from which to estimate the probable number of locks required to overcome the rapids and falls on the river. Dr. Bell estimates 250 feet as the amount of fall to be overcome by locks, but for large sized vessels probably there would be more.

The amount of power which is available for development along the Nelson river is enormous, and places the Hudson Bay Railway in a very favourable position to use electricity for the operation of its trains.

9-10 EDWARD VII., A. 1910

Churchill Harbour.—No examination of this harbour has yet been made by any of our engineers, but a great deal of information has been gained from reports of Hudson Bay Company officers, and from reports of different departments of the government.

At the present time it seems to be the best natural harbour on the west coast of Hudson bay, but an examination of the chart of the harbour (Plan No. 3) shows that the area in which a ship drawing 20 feet of water could anchor is comparatively small, and if the Hudson bay route proves a success, a great deal of excavating and filling will be required before a successful commercial port is made of it. Most of the portion to be dredged is at present under from one to two fathoms of water at low tide, leaving an average depth to be dredged of at least 20 feet. On the plan, rock is shown along both shores, indicating the possibility of striking solid rock excavation before the proper depth is obtained in the harbour. As this is a very expensive operation, borings will have to be taken before a reliable estimate can be made as to the probable cost of converting Churchill into a feasible commercial port. As the shallows in the harbour have undoubtedly been caused by silt carried down by the Churchill river, whatever basin is excavated will probably require continuous dredging afterwards to preserve the proper depth of water in the harbour.

The following table showing the opening and closing of navigation at Churchill is by Mr. J. B. Tyrrell, and published by the geological department in 1897. It was compiled by Mr. Tyrrell from an inspection of the Hudson Bay Company's records kept between 1824 and 1894.

—	Open.	Closed.	Length of open Season.
Average	June 19	Nov. 18	5 months.
Earliest	June 5, 1863 ..	Nov. 1, 1837 ..	
Latest	July 2, 1866 ..	Dec. 4, 1861 and 1885	
Longest season			5 months 18 days, 1846.
Shortest season			4 months 8 days, 1838.

Port Nelson.—This harbour lies at the mouth of the Nelson river, but will require further surveys to definitely determine its value as a port for the Hudson Bay route. From the information at hand it would appear as though a channel some ten miles in length approaching the harbour will require more or less improvement. The surface indications in the neighbourhood suggest the probability that whatever dredging and excavation may be required will be in easy material, and may be done at a minimum cost for that class of work.

The only map or chart yet obtained (Plan No. 4) shows from four to five fathoms of water to within about ten miles of the head of tide water. Dr. Bell in his report, published in The Report of Progress of the Geological Survey, 1877-78, states that he found an average of from two to three fathoms of water at low tide in this portion.

The following table shows the opening and closing dates of the harbour at York Factory, some twenty miles from Port Nelson.

This table is compiled from the records of the Hudson Bay Company, kept between 1828 and 1879, and published by Dr. Bell in his report of 1879-80.

—	Open.	Closed.	Length of Season.
Average	May 19	Nov. 20	6 months.
Earliest	May 7, 1846 ..	Nov. 3, 1878 ..	
Latest	June 1, 1828 ..	Dec. 9, 1851 ..	
Longest			6 months and 18 days, 1846.
Shortest			5 months and 13 days, 1853.

SESSIONAL PAPER No. 20

No accurate record has been kept of the opening and closing of the harbour at Port Nelson, but the season is usually estimated by Hudson Bay Company officers, and others qualified to judge, as being about one month longer than York, or about seven months in the year.

The harbour never freezes completely over, but more or less ice always drifts up and down with the tides.

A comparison with the Churchill dates shows that the shortest season at York is within a few days of the longest at Churchill, and the average a full month longer, with the probability of nearly two months in favour of Port Nelson.

The following would appear to be the chief points favouring the selection of Port Nelson as the Hudson bay terminus of the road.

(1) From one to two months longer open season of navigation.

(2) A better situation in case the Hudson Bay route proves so successful as to warrant the construction of a canal from Lake Winnipeg down the Nelson river to Hudson Bay.

(3) Saving in railway distance of from sixty to seventy miles of line, as well as a less average cost per mile for the line to be built than for the line to Churchill.

The chief drawback to the selection of Port Nelson appears to be the approach to the harbour from the sea. The conditions there seem to point to the necessity of constructing a channel some ten miles in length from the harbour to the open sea, but, so far, the evidence obtained does not indicate that this is such a serious problem as to warrant the selection of Churchill without further examination of both harbours.

The chief point in favour of Churchill appears to be its present easy entrance from the sea, and a well sheltered anchorage when inside, but when the construction of docks and other works necessary to make it a first class shipping port are considered, its advantage in this respect does not seem sufficient to counterbalance the more favourable conditions obtained at Port Nelson.

RAILWAY LINE TO CHURCHILL.

The railway line from The Pas to Fort Churchill may be divided into three sections, each section requiring a characteristic class of work for that division.

The first division of approximately 150 miles, extending from The Pas to the neighbourhood of the south end of Setting lake is the lightest division of the three, the line run passing over a gently undulating or flat country. A large percentage of the line will be a light bank, made mostly from side borrow. In the first 60 miles, considerable quantities of muskeg or swamp are met with, but none are very deep, and present no difficulty to railway construction.

The balance of the line down the Mitishto river is largely in clay loam, and should be very cheaply executed. There will be very little, or no, solid rock excavation required, and probably not a large percentage of loose rock. Quite a number of culverts will be required, and a few pile trestles. The clearing and grubbing on this section will likely be the heaviest on the line.

The second section, extending about from the south end of the Setting lake to the summit between the waters of the Nelson river and those of the Churchill, some 175 miles, would require more expensive construction, considerable solid rock being met with at various points, especially along the Odei river and the Burntwood river. The country is more broken up than on section one, and will require the moving of a much greater quantity of material to form the road bed. The other items of construction, such as clearing, waterways, &c., will be comparatively light.

Explorations are being undertaken along the eastern side of Setting lake and the Grass river. The information so far obtained indicates the probability of greatly reducing the cost of this section, and at the same time not greatly increasing the

9-10 EDWARD VII., A. 1910

length of the line, by keeping east of this lake and river; thereby avoiding much of the rock encountered in following the west side.

Section three, extending from about the 325th mile to Churchill, about 140 miles, presents the greatest difficulties in the way of making an estimate of the cost of the road bed. A great many muskegs are met with. The upper 100 miles towards Churchill, especially, is almost entirely over a sort of mossy tundra, and according to the best information obtainable seems likely to be perpetually frozen to within a few inches of the surface. This may be partially overcome by following the ridges and streams, but to what extent has not yet been definitely decided. Owing to the lack of definite information as to the cost of handling such frozen material, the final cost of constructing the road over this portion of the country may be found to vary from the estimate more than usually is the case. With the exception of this frozen material there are no other serious problems on this section.

The grades adopted throughout have been $\frac{1}{10}$ of one per cent east on north bound and $\frac{1}{10}$ of one per cent south bound. No difficult or particularly heavy work has been encountered which could have been materially lessened by the use of heavier gradients.

In fact, it seems probable that the south bound grade might be reduced to $\frac{5}{10}$, without greatly reducing the cost.

In the estimate attached, the price of 55 cents per cubic yard for grading has been arrived at by taking the quantities and classification of material as estimated by the engineers in charge of the different parties. The prices used were as follows:—

Solid rock, \$1.50 per cubic yard; loose rock, 60 cents, and common excavation, 25 cents. The use of these prices gave an average of 55 cents per cubic yard for all the materials required to be moved in the construction of the road bed, including side tracks, terminal tracks, and drainage ditches.

The northern hundred miles towards Churchill, being mostly over an open barren, more or less trouble with snow may be expected.

RAILWAY LINE TO PORT NELSON.

The work done to date on this line consists of about 100 to 120 miles of line run from The Pas to the point where the line diverges from the Churchill line. The crossing of the Nelson river has been fixed upon, and the country between this crossing and the junction with the Churchill line has been examined. From the Nelson river crossing to Port Nelson the country is under examination at the present time, but a great deal of information has been gained from reports published by the Geological Surveys, and if their reports of this part of the country are as accurate as they have been found in other districts, it is not likely the estimate furnished here will need any great revision. On this line we do not strike the frozen tundra to any great extent; such stretches as are met with being short detached pieces, resembling more the spruce swamps found in Manitoba. Very little rock work will be required on this line anywhere.

This line being entirely in bush country will not have the same snow problem to contend with as is met on the northern hundred miles of the Churchill line.

SESSIONAL PAPER No. 20

ESTIMATED COST OF CONSTRUCTION, THE PAS TO FORT CHURCHILL.

Estimated distance, 465 miles.

Description of Work.	Measure.	Quantity.	Rate.	Amount.
			\$ cts.	\$
Clearing.....	Acres	7,200	40 00	288,000
Grubbing.....	"	600	100 00	60,000
Grading.....	Cu. yds. ...	8,370,000	0 55	4,603,500
Piling.....	Lin. ft.	180,000	0 40	72,000
Timber in trestles and bridges.....	Ft. b. m. ...	6,563,000	45 00	295,335
Timber in culverts.....	"	5,700,000	40 00	228,000
Iron in culverts and trestles.....	Lbs.	725,000	0 05	36,250
Ties.....	Each.	1,650,000	0 40	660,000
Ballasting.....	Cu. yds. ...	1,000,000	0 40	400,000
Steel rails (laid).....	Tons.	52,000	45 00	2,340,000
Angle bars and bolts.....	"	5,000	50 00	250,000
Track spikes.....	Lbs.	3,300,000	0 04	132,000
Telegraph lines.....	Miles.....	465	300 00	139,500
Stations, section houses, &c.....		31	4,000 00	124,000
Water tanks (complete).....		31	5,000 09	155,000
Roundhouses and terminal buildings.....		5		300,000
Saskatchewan river crossing.....				275,000
Engineering and administration.....				1,250,000
Total.....				11,608,585

ESTIMATED COST OF CONSTRUCTION, THE PAS TO PORT NELSON.

Estimated distance, 397 miles.

Description of Work.	Measure.	Quantity.	Rate.	Amount.
			\$ cts.	\$
Clearing.....	Acres	7,200	40 00	288,000
Grubbing.....	"	600	100 00	60,000
Grading.....	Cu. yds. ...	6,000,000	0 40	2,400,000
Piling.....	Lin. ft.	220,000	0 40	88,000
Timber in trestles and bridges.....	Ft. b. m. ...	4,500,000	45 00	202,500
Timber in culverts.....	"	7,000,000	40 00	280,000
Iron in culverts and trestles.....	Lbs.	675,000	0 05	33,750
Ties.....	Each.	1,350,000	0 40	540,000
Ballasting.....	Cu. yds. ...	900,000	0 40	360,000
Steel rails (laid).....	Tons.	43,000	45 00	1,935,000
Angle bars and bolts.....	"	4,100	50 00	205,000
Track spikes.....	Lbs.	2,700,000	0 04	108,000
Telegraph lines.....	Miles.....	397	300 00	119,100
Stations, section houses, &c.....		27	4,000 00	108,000
Water tanks (complete).....		27	5,000 00	135,000
Roundhouses and terminal buildings.....		4		240,000
Saskatchewan river crossing.....				275,000
Nelson river crossing.....				300,000
Engineering and administration.....				1,000,000
Total.....				8,677,350

PART VI

REPORTS OF CANAL SUPERINTENDING ENGINEERS
AND OTHERS FOR THE YEAR 1908-09

1. E. Marceau, Superintending Engineer, Quebec Canals.
2. L. N. Rheume, St. Lawrence Canals.
3. W. A. Stewart, Superintendent of Operation, St. Lawrence Canals.
4. J. L. Weller, Superintending Engineer, Welland Canal.
5. F. B. Fripp, Engineer in Charge, Sault Ste. Marie Canal.
6. J. W. LeB. Ross, Superintending Engineer, Sault Ste. Marie Canal.
7. A. J. Grant, Superintending Engineer, Trent Canal.
8. A. T. Phillips, Superintending Engineer, Rideau Canal.
9. J. H. Devereaux, Lock Master, St. Peters Canal.
10. J. H. McClellan, Superintendent, Trent Canal.
11. E. J. Walsh, Trent Canal Surveys.

QUEBEC CANALS.

SUPERINTENDING ENGINEER'S OFFICE,

MONTREAL June 7, 1909.

SIR,—I have the honour to submit herewith my annual report on the works under my charge for the fiscal year ended March 31, 1909.

This division comprises the Lachine, the Soulanges and the Beauharnois canals on the St. Lawrence route; the Ste. Anne, the Carillon and Grenville canals on the Ottawa river, and the Ours and the Chambly canals on the Richelieu river.

Of these the Lachine canal is by far the most important on account of its immediate connection with the harbour of Montreal.

I have much pleasure in stating that the only interruption to navigation on the canals of this division was one of 24 hours duration on the Soulanges canal, by the steamer *Bronson* colliding with the St. Antoine bridge and throwing it off its pivot, on June 16, 1908.

The necessary repairs were done by the Phoenix Bridge and Iron Works, of Montreal.

CANAL STORES.

The controller of the canal stores reports that the various officials in charge of the stores on the canals of this division have not yet brought themselves to fully understand the keeping of the books supplied for their work, although there is a material progress in this direction. As a matter of fact, I do not expect that we will reach perfection here before another year or so, but, even at this date the controlling of expenditure is already very much better than it was a couple of years ago.

LACHINE CANAL.

REPAIRS AND RENEWALS.

Length $8\frac{1}{2}$ miles, 5 locks 270 x 45 feet, 14 feet of water on sills, old locks 200 x 45 feet, total rise 45 feet, still available with 9 feet of water on sills.

A considerable amount of work was done here in the shape of general repairs. The chief items of work being as follows :—

Lock Gates.—Building one pair of gates for lock No. 5 and putting it in position.

Swing Bridges.—Scraping some portions of the steel work and giving it a coat of paint where necessary. Raising Wellington bridge, renewing three sections of the reinforced steel rack, putting in 5-inch vertical steel shaft, gear and pinion. The bridge is now being operated with ease.

Stationery Bridges.—A new steel bridge, 90 feet long, was built out of the scraps from the old composite canal bridges. It will soon be put in position in place of the old wooden bridge over the supply weir at Lachine.

Wharfs.—The wharfs at the Montreal Warehousing Company and at the Sugar Refining Co., were pretty extensively repaired, some of the stringers and the planking being renewed.

Cast-iron Mooring Posts.—Over 100 cast-iron mooring posts, set in concrete were placed in the following position : 12 on the north side of north basin No. 1, 10 on the

9-10 EDWARD VII., A. 1910

south side of the same basin, 2 on the south side of north basin No. 1, 12 around old lock No. 3, 12 around old lock No. 4, 50 on the north and south banks between Brewster's bridge and the Imperial Oil Company's works at Côte St. Paul and 6 on the north bank below lock No. 4.

Concrete and Masonry Work.—The south lock wall above the upper gate of new lock No. 3, was raised a couple of feet with concrete faced with heavy steel plate, and lock No. 4 was treated in the same manner.

The cribwork pier on the south side of old lock No. 4 was underpinned with concrete so as to stop the scouring that has been going on there for years. The bottom of the canal immediately below old lock No. 4 and the bottom of the weir tail race at the same point were extended some distance to prevent the undermining of the banks and piers.

Buildings.—A new machine shop 100 x 40 feet, was partly constructed in the Mill street yard, the foundations for the walls and concrete beds for machine tools being laid by our own staff last fall. The steel structure was supplied and erected under contract, by the Phoenix Bridge and Iron Works of Montreal. The building will be completed in the near future.

An extension, 120 feet in length, was built at the south end of carpenters' shop, on the west side of the government dry dock. Most of the material used therein was taken out of the old shed which stood on the site of the new machine shop. The canal saw-mill will soon be installed in this extension.

River St. Pierre.—As the district through which this stream flows becomes more densely populated, the keeping clear of the river bed and of the culvert which takes it under the canal becomes more onerous. Last season the removal of weeds and refuse of all kinds had to be done three times over. The time is fast approaching when a regular sewer must be provided for this district.

Roads and sidewalks.—The maintenance of the various roads and sidewalks connected with the canal, entails a considerable yearly expenditure. During the last season of navigation, the macadamized portions of the roads were scraped and metal added where necessary and all the wooden sidewalks kept in good repair. During the winter snow and ice were removed from and ashes spread over the latter, as often as required.

Fences.—A new permanent iron tube fence with posts bedded in concrete was built along the raceway at weir No. 1.

Electrical service.—Our two power-houses were kept in a good state of repair throughout the year. Now that they are kept going night and day, it has been necessary to increase the staff at both points.

As suggested some time ago it seems advisable to completely re-arrange the present system by discarding the power house at Mill street, which is a rather antiquated one and by extending the present building at Côte St. Paul, so as to operate the whole canal from the latter point. The electrical engineer of the department, Mr. John Murphy, is to take up this matter shortly, and I am putting in an amount in the estimates for 1910-11 for the above purpose.

A single power-house would cost considerably less to operate than the two present ones.

The lock gates on this canal are now being electrically operated. The necessary machinery was built during the winter months, under the direction of the overseer of the canal and most of it was installed before the opening of navigation. It is working very satisfactorily and Mr. D. O'Brien deserves credit for it.

SESSIONAL PAPER No. 20

CAPITAL.

Slope walls.—The facing of the slope walls with concrete as described in my last annual report, was continued by Messrs. Haney, Quinlan and Robertson last summer and fall, the whole of the south side being completed about the end of August.

Some bad leaks on the north side were attended to during September, October and the early part of November, 1908. During the latter period some 6,000 lineal feet of facing were laid and there still remains about 4,000 feet to be done to complete the north side. The work so far done has almost entirely stopped the leaks as expected, in the section covered.

Widening and wharf accommodation at St. Henri and Côte St. Paul.—The contract for this work was awarded to the Canadian General Development Company Limited, in October, 1908. No work had yet been done by the contractors at the close of the last fiscal year.

Testing cement.—Regular and continuous testing of various brands of cement purchased for the canals of this division was carried on throughout the year. Complete and systematical records of such testing are kept in the laboratory.

INCOME.

Rebuilding north wall, Basin No. 2 and walls of side Basins No. 1 and 2.—The greater portion of this work was done in the spring of 1908. The wharfs along the north side of the canal from McGill street to Colborne street have been paved with granite and scoria blocks, except the section between Black's bridge and the south end of Colborne street, where vitrified bricks were used.

The walls or the portion of them now completed have been underpinned with concrete, so as to allow of the deepening of the basins to 23 or 24 feet. When the side basins are finished the section of the canal between lock No. 1 and Wellington Basin will be completed in a permanent manner.

This work, which is being done under contract by Messrs. Quinlan & Robertson, together with all capital and income work on the Lachine canal, is under the immediate care of Mr. R. H. Lordly, C.E.

DREDGING.

During the months of May and June and up to July 16, the dredging fleet was engaged at various points in the Lachine canal, especially above Black's bridge, in Basin No. 2, at Côte St. Paul and in the upper entrance, removing obstructions, cleaning the canal prism and the side basins off the north side of basin No. 2. The material dredged out of the upper entrance was used in strengthening the upper section of the long river pier, which is giving signs of weakening and which will have to be extensively repaired in the near future. In my opinion the dry walls on both faces of this pier should be replaced or faced with concrete, so as to be made permanent and strong enough to resist the ice shoves in the spring.

The total quantity of material dredged out of the Lachine canal during the period above mentioned was about 9,400 cubic yards.

About the middle of July, the dredging fleet was taken up to Carillon and during the two following months was engaged removing from the upper entrance, a quantity of loose and solid rock amounting to 5,100 cubic yards.

In the month of October and the first part of November dredging was done at the east end of the lower entrance, in the channel near the public wharf and at the south or Ile Perrot and of the south channel, the quantity of material solid rock and boulders removed being 7,550 cubic yards.

On November 18 the fleet left for Montreal and went into winter quarters a few days later.

9-10 EDWARD VII., A. 1910

REPAIRS TO VESSELS.

A considerable amount of repair was done last year towards the maintenance of the dredging fleet. Dredge No. 2 is now a pretty old vessel and both its hull and machinery had to be completely overhauled during last winter.

Derrick No. 2 and the steam tug *Frank Perew* also received a good deal of attention.

In addition to these vessels, all our dumping and flat scows were kept in good order and made ready for the coming season's work.

QUEBEC CANALS SURVEYS.

Two parties were out in the field during last season, one on the Soulanges canal and the other on the Chambly canal and St. Ours lock.

The section surveyed by the Soulanges party covered a distance of six miles, from Côteau Landing to St. Dominique bridge. It embraces the whole strip of land between the Grand Trunk Railway tracks and the St. Lawrence river and determines the exact positions of all the canal ditches, roads, &c.

At Chambly the work done was intended to secure the necessary data for the proposed widening and deepening of the lower section of the canal and the construction of new locks and weirs.

The survey made at St. Ours had for its object the making of an accurate plan of the present works and also the procuring of the necessary data for the building of a new lock.

In addition to the above a number of minor surveys were made in connection with leases, claims, &c.

QUEBEC CANALS.

Equipment.—During the last fiscal year the following machines were purchased for these canals: One 8 ton steam roller, one stone crusher and one concrete mixer. They are to be used on any of the Quebec canals, as required.

The income and capital work on the Soulanges, Beauharnois, Chambly, St. Ours, Ste. Anne, Carillon and Grenville canals, is under the immediate supervision of Mr. L. S. Pariseau, C.E.

BEAUHARNOIS CANAL.

Ste. Barbe Dyke.—Considerable damage having been done to the lands south of this dyke, by the unusually high water of 1908, it was decided to raise the dyke about 18 inches, in order to guard against such damage in future. The work thus done extends on a length of 13,000 feet. It had to be done for a great part while the flood was at its highest, the balance being executed during last winter.

Its result was quite satisfactory. This spring although the lake waters very nearly reached the level of last year's not a drop of water went over the raised dyke.

This dyke originally stood about 200 feet from the shore line, but owing to the prolonged action of the waves on the soft ground, the protecting strip became so much reduced in width that it had to be protected itself by a chain of boulders built some distance into the lake. Some 4,250 feet of this protection wall was built last year, the stone being purchased under tender from farmers in the neighbourhood and laid by our staff.

Hungry Bay Dyke.—The unusual flood of the spring of 1908 seriously endangered this dyke, the waters of Lake St. Francis ran over it in many places and overflowed a considerable area of land in the parishes of St. Stanislas and Ste. Cécile. A large gang of men had to be employed to temporarily repair the breaks in April and May, 1908, but the permanent protection work could only be commenced in December last.

This protection work consists at certain points of cribwork with boulders carefully laid by hand on top forming a rough but heavy wall. Where the water was

SESSIONAL PAPER No. 20

shallow, the cribwork was dispensed with, the stone being laid directly on the bottom of the lake.

The cribwork with the stone on top was built under contract by Messrs. Cossette & Clermont, the balance of the work being done by days labour.

The protecting of both dykes will be continued during the fiscal year 1909-10.

SOULANGES CANAL.

Length, 14 miles; 5 locks, 270 x 45 feet; 15 feet of water on sills; total rise 84 feet.

REPAIRS AND RENEWALS

Locks.—The placing of the Manny's patented protection beams on the lock gates here, was completed during last season and some alterations and improvements made.

The gate and valve operating machinery was overhauled and extensively repaired during the spring and summer of 1908.

Bridges.—The approaches to the new bridge built last year, on the highway over Clement's Gully, were raised and graded by our men, the clay used being taken from the hills at the north end, so as to make the grade easier. The roadway was then macadamized.

Slope lining.—The renewing of the slope lining of the slopes has been continued throughout the summer, 7,000 cubic yards of sandstone from the canal quarry being used covering a distance of 15,200 feet.

Fences.—The wire fences on both sides of the canal reserve from St. Dominique bridge to Côteau Landing, were thoroughly repaired during last summer, and the iron pipe fences around the lock and weir at the latter point were taken up, the concrete base of the posts reinforced and the fences re-set. They are now permanent.

Painting.—The lock gates, the lock houses, the swing bridges at lock No. 3 and at Côteau Landing, as well as the statistical officer's office at that point, the power house and the shed at the overseer's house, were painted last summer.

Waling Pieces.—The timber waling placed along the walls in both entrances to the canal were in great need of repair, 2,500 feet of it was renewed at low water. The work will proceed during the coming summer.

CAPITAL.

Equipment.—The workshops were provided last year with 2 5-horse-power electrical motors with the necessary transformers.

Shed for Timber and Lumber.—This shed 100 x 36 feet and 17 feet high, is built of solid brick on concrete foundations with pointed roof covered with galvanized sheet iron. It is very much in keeping with the other buildings, shops, stores, &c., of the canal.

The same must be said of the extension built on the north side of the machine shop and which is now being used as a blacksmith's shop. The two buildings were erected, under contract, by Mr. Theo. Belanger.

Cast iron Mooring Posts.—32 new posts were placed along the north bank of the canal at various points.

INCOME.

Steps to Shops.—A handrail supported by cast iron posts has been set along the long concrete steps leading down from the canal bank to the workshops.

9-10 EDWARD VII., A. 1910

Gate Lifter.—A gate lifting seow built of steel, 55 feet x 30 feet x 6 feet. The hull is divided into water-tight compartments and the machinery on it is devised to lift 60 tons with safety. The hull was built by Messrs. Beauchemin & Co., of Sorel, the cranes by the Phoenix Bridge & Iron Works, of Montreal and the gear by the Hall Engineering Works, of Montreal.

Cast-iron mooring posts.—A large number of these posts had been displaced and some even turned over by vessel lines, the concrete blocks in which they were set being too light, 38 of them were raised and reset in much heavier concrete bases.

CHAMBLY CANAL.

Length, 12 miles; 9 locks, 118 x 22½ feet; 6½ feet of water on sills; total rise 74 feet.

REPAIRS AND RENEWALS.

The main items of work performed under the above heading during the fiscal year just closed, were as follows:—

Canal banks.—A considerable quantity of dredged material taken out of the canal prism and basins was used in widening or raising some portions of the banks, especially in the vicinity of bridge No. 1.

Locks.—One new pair of gates was placed on lock No. 1, at St. John. All the gates were painted and joints pointed where necessary.

Waste weirs.—The two waste weirs in basins Nos. 4 and 5 respectively, which were under way at the close of 1907-8, were completed during the year. They are built of concrete and will now be permanent.

Bridges.—Besides painting all the wooden bridges on the line, the rest abutment of bridge No. 7, was taken down and rebuilt of concrete.

Wharfs.—The wharf north of bridge No. 8, on the west side of the canal, which was of timber, was renewed with concrete and the renewing in the same manner of the wharf in basin No. 6 was commenced, a length of about 100 feet having been completed at the end of the fiscal year.

Buildings.—In addition to the keeping in good repair of the numerous buildings on this canal, the renewing of the lock and bridge watch-houses was completed. These watch-houses are of a nice pattern and give a neat appearance to the lock and bridge grounds.

CAPITAL.

Under capital account I have to report the laying of the concrete foundations of the proposed new power-house. The old power-house had been destroyed by the ice in the spring of 1904 owing to the increased height of the flood due to the dam built across the Richelieu river, by the Chambly Manufacturing Company, now controlled by the Montreal Light, Heat and Power Company. The latter has since supplied the canal with the required power under an agreement, dated January 12, 1907 (No. 16499).

At present time the lower section only (about 2 miles in length) of the canal is being electrically lighted, and in view of the extension of the lighting the whole length of the line, the foundations of the power-house have been devised for water-power sufficient for the purpose. The power-house proper will be built during the year 1909-10.

SESSIONAL PAPER No. 20

St. John's Harbour.—The contract for the proposed improvements in the St. John's harbour was awarded to Messrs. John C. Poupore & Co., on December 15, 1903. At the close of the fiscal year, nothing had been done by the contractors beyond delivering material for the work.

Power-house.—As recorded under the head of repairs, the foundations for the new enlarged power-house here, were built by the canal staff during the last fiscal year. They were laid with a view of installing the necessary machinery for the lighting of the canal on its entire length. The building proper will be erected during the fiscal year 1909-10.

INCOME.

Lockmaster's House, Lock No. 4.—An addition to this house, 12 x 24 feet, was built during last summer and some alterations made to the old building.

Telephone Line.—The whole line was entirely rebuilt from Chambly to St. John's. The service which had been very poor for some time past, is now most satisfactory.

Macadamizing tow-path.—This work has been going on for three or four years. The whole of the tow-path is now macadamized from Chambly to Langelier's bridge, a short distance south of the guard lock at St. John's.

Strengthening wall at Ste. Thérèse.—I have to report the completion of this work necessitated by a break in the canal bank 4 years ago. The new wall is built of heavy blocks of stone laid some distance into the river, so as to allow of the widening of the bank on a distance of over 1,500 feet. This portion of the bank which had always been weak is now perfectly safe.

Wharf in the Harbour of St. Johns.—The old timber wharf on the west side of the St. John's harbour was taken down from low water to the top and rebuilt with concrete on a length of 555 feet. The new front wall has also been raised about 15 inches, in order to put the wharfs above any possibility of being flooded in future.

Public road.—The macadamizing of the road on the west side of the canal was continued last summer. The work was executed in the usual manner, viz., the crushed stone was furnished, under contract, by Mr. J. E. Hébert, the spreading and compacting of it being done by day's labour.

ST. OURS LOCK.

Length of canal $\frac{1}{2}$ mile; one lock, 200 feet x 45 feet; 7 feet of water on sills; total rise, 5 feet.

REPAIRS AND RENEWALS.

The various structures on this canal were kept in good repair during the year, the chief items of work performed being as follows:—

Some of the cribwork piers below the lock had to be pretty extensively repaired as they had been injured by ice during the spring flood.

At the close of navigation in 1907, eight of the booms which serve to guide vessels coming in and out were taken ashore, allowed to dry up throughout the winter and after having been overhauled were put in position again at the opening of navigation.

Our main repair scow, 55 feet in length by 23 feet in width was taken apart and almost entirely rebuilt during last summer.

A quantity of field stone was placed on the shores of the island as a protection against scouring.

In the beginning of September, 1908, the electric lighting of the lock and its approaches, by arc lamps was inaugurated. This service is being done under contract

9-10 EDWARD VII., A. 1910

by the Sorel Electric Company who provide the line, lamps and necessary current at schedule rates. There are in all ten 2,000 c.p. lamps: four on the lock, two along the lower approach, three in the upper approach, and one in the yard near the shops.

In addition to the above a number of incandescent lamps have been placed in the various buildings connected with the canal.

The new light is a decided improvement on the old system of oil lamps and greatly facilitates navigation at the lock.

Owing to exceedingly low water last fall, some difficulty was experienced by vessels in coming in and out at both ends of the canal. Some dredging will require to be done at both these points in the near future.

STE. ANNE LOCK.

Length, $\frac{1}{2}$ mile one lock, 200 x 45 feet; 9 feet of water on sills; total rise, 3 feet
Old lock still available, 200 x 45 feet; 6 feet of water on sills; total rise 3 feet.

REPAIRS AND RENEWALS.

The ordinary repairs at this point consisted of painting the overseer's house and collector's office, as well as all other buildings connected with the lock; renewing parts of fences around the canal property; repairing some of the booms in the south channel and overhauling another boom, 400 feet long, on the north side of the upper entrance.

In addition to these, the west end of the north bank above the lock, which consisted of cribwork, was taken down and rebuilt with concrete. The old store shed on the long pier below the lock was taken down and a new one provided. Four strong cast-iron mooring posts, bedded in concrete were placed on the lock and Manny protection beams installed on both gates.

CARILLON AND GRENVILLE CANALS.

Carillon Canal.—Length, $\frac{3}{4}$ miles; 2 locks, 200 x 45 feet; 9 feet of water on sills; total rise, 16 feet.

Grenville Canal.—Length, $5\frac{3}{4}$ miles; 5 locks, 200 x 45 feet; 9 feet of water on sills; total rise, $43\frac{3}{4}$ feet.

REPAIRS AND RENEWALS.

Among the work performed in connection with maintenance of these canals during the last fiscal year, the following may be mentioned as the most important:—

Repairing one pair of gates for lock No. 5.

Maintenance of canal banks.

Repairing gate for lock No. 2.

General repairs to locks and bridges.

Rebuilding culvert at old feeder, which had been carried away by the spring floods.

Covering drain at Stonefield.

INCOME.

During the month of September last authority was given to proceed with the macadamizing of the road along the old abandoned canal, which is used as a public highway. The necessary stone was purchased under tender and our own stone crusher used in preparing it. It was then spread on the road by day labour, then the metal was rolled by our own steam roller. About one half of the whole length of two miles was completed last fall and the balance will be done during the coming summer.

SESSIONAL PAPER No. 20

Dam.—The break in the Carillon dam, caused by the spring flood of 1908, was repaired during the last fiscal year, the work being done by Messrs. Haney, Quinlan & Robertson. This break, as reported, extended the whole width of the old abandoned slide, the piers of which were taken down and the gap filled with substantial crib-work.

In addition to this work a considerable amount of repair was done at various points in the dam proper, which had also suffered from the high water. These repairs could not be completed last year, but will be so during the coming season of low water.

Public Road.—A piece of road a couple of miles in length, the maintenance of which devolves on the department was partly macadamized in 1908-9. Stone for the work was purchased, under tender, from farmers in the vicinity. Our own crusher was used for the breaking of it and the spreading of this stone done by the canal staff. Our own steam roller was also used in compacting the road bed and the stone.

The work will proceed during the coming summer.

I have the honour to be, sir,
Your obedient servant,

ERNEST MARCEAU,
Supt. Engineer Quebec Canals.

M. J. BUTLER, Esq.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa.

9-10 EDWARD VII., A. 1910

LACHINE CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of new Lock No. 1 at lower entrance and new Lock No. 5 at upper entrance during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1 LOWER SILL.				LOCK NO. 5 UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April	37	10	21	4	19	7	18	5
May	25	8	22	6	21	8	20	3
June	24	4	19	6	20	9	18	4
July	19	4	17	3	18	4	17	2
August	17	11	16	0	17	2	16	4
September	16	0	15	0	16	4	15	8
October	15	3	14	0	15	10	15	1
November	14	7	13	10	15	2	14	8
December	30	0	13	9	16	10	14	5
1909.								
January	32	2	24	5	16	10	14	2
February	26	5	24	0	16	6	14	3
March	26	10	24	10	16	4	14	7

SOULANGES CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of Lock No. 1 at lower entrance and Lock No. 5 at upper entrance during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1 LOWER SILL.				LOCK NO. 5 UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April	21	9	20	3	19	0	18	0
May	23	4	21	3	19	0	18	4
June	22	3	20	0	18	8	18	3
July	19	9	18	9	18	5	17	8
August	18	8	18	2	17	9	17	5
September	18	2	17	4	17	6	17	0
October	17	3	16	9	17	1	16	6
November	16	9	16	5	16	8	16	3
December	19	3	16	6	16	7	15	5
1909.								
January	19	5	18	0	16	9	16	0
February	22	0	19	8	17	2	15	8
March	22	4	19	4	16	9	16	2

SESSIONAL PAPER No. 20

BEAUHARNOIS CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of Lock No. 6 at lower entrance and Lock No. 14 at upper entrance during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 6 LOWER SILL.				LOCK NO. 14 UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
1908.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
April	14	3	13	4	13	5	12	5
May	16	4	14	0	13	6	12	7
June	15	0	12	10	12	9	12	5
July	12	10	12	0	12	8	12	4
August	12	0	11	0	12	5	11	11
September	11	4	10	2	12	0	11	6
October	11	0	10	2	11	8	11	0
November	10	2	9	5	11	3	10	10
December	14	6	9	3	11	2	10	8
1909.								
January	19	0	12	9	11	8	10	9
February	21	6	14	0	11	10	10	7
March	18	0	11	6	11	11	11	3

CHAMBLY CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of Lock No. 9 at lower entrance and Lock No. 1 at upper entrance during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 9, LOWER SILL.				LOCK NO. 1, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
1908.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
April	21	9	11	0	12	7	11	2
May	17	7	15	4	12	3	10	11
June	15	5	11	8	10	10	9	3
July	11	6	9	6	9	3	8	1
August	9	4	8	3	8	3	7	2
September	8	9	7	3	7	9	6	6
October	7	8	6	10	7	5	6	0
November	7	4	6	8	7	9	6	3
December	7	5	6	10	6	9	6	4
1909.								
January	8	9	6	9	7	9	6	7
February	12	5	8	7	9	7	7	10
March	16	10	11	11	9	11	9	4

9-10 EDWARD VII., A. 1910

ST. OURS LOCK.

STATEMENT showing the depth of the River Water on the Mitre Sills of St. Ours Lock during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1, LOWER SILL.				LOCK NO. 1, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April.....	21	0	16	0	16	11	12	10
May.....	19	0	16	8	14	10	13	0
June.....	17	5	11	6	13	2	10	1
July.....	11	3	9	2	10	0	8	9
August.....	9	0	7	11	8	8	7	11
September.....	7	10	6	8	8	2	7	6
October.....	7	2	5	9	7	11	7	0
November.....	6	7	5	5	7	9	7	0
December.....	9	7	5	5	7	5	7	2
1909.								
January.....	11	5	7	9	8	4	7	0
February.....	12	6	10	3	9	9	8	1
March.....	15	9	12	0	12	1	9	6

STE. ANNE LOCK.

STATEMENT showing the depth of the River Water on the Mitre Sills of the Ste. Anne Lock, during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1, LOWER SILL.				LOCK NO. 2, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April.....	14	7	13	7	15	11	13	0
May.....	16	10	14	8	19	4	16	6
June.....	15	10	13	2	18	2	14	1
July.....	13	3	11	11	13	8	11	10
August.....	12	0	11	2	11	9	10	5
September.....	11	3	10	6	10	5	9	7
October.....	10	8	9	10	9	7	9	2
November.....	10	2	9	8	9	8	9	4
December.....	11	11	9	9	10	7	9	9
1909.								
January.....	11	10	10	7	10	8	10	4
February.....	11	6	10	4	11	5	10	8
March.....	11	6	10	5	11	6	10	9

SESSIONAL PAPER No. 20

CARILLON CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of Lock No. 1 at lower entrance and Lock No. 2 at upper entrance, during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1, LOWER SILL.				LOCK NO. 2, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April	17	10	15	3	17	6	13	7
May	21	10	17	3	22	0	18	10
June	21	3	15	3	19	11	14	9
July	15	3	13	0	14	7	11	0
August	12	0	10	4	11	10	10	0
September	11	7	10	8	9	11	8	10
October	10	7	10	0	9	5	8	2
November	10	10	10	0	10	10	9	4
December	11	10	10	10	13	2	10	6
1909.								
January	11	11	11	6	16	7	12	0
February	12	6	11	8	13	11	11	6
March	12	9	12	0	12	8	11	0

GRENVILLE CANAL.

STATEMENT showing the depth of the River Water on the Mitre Sills of Lock No. 3 at lower entrance and Lock No. 7 at upper entrance, during the Fiscal Year ending March 31, 1909.

Months.	LOCK NO. 1, LOWER SILL.				LOCK NO. 3, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1908.								
April	22	8	17	6	18	10	13	7
May	27	3	23	0	23	10	19	3
June	25	2	18	6	21	11	16	2
July	18	3	14	9	16	0	12	8
August	14	7	12	5	12	6	10	4
September	12	5	11	1	10	3	9	2
October	11	3	10	5	9	4	8	7
November	13	0	11	2	9	8	9	0
December	15	2	13	1	10	4	9	4
1909.								
January	19	0	14	6	10	3	9	10
February	20	0	17	0	10	6	10	2
March	17	1	14	1	11	6	10	5

9-10 EDWARD VII., A. 1910

WELLAND CANAL.

OFFICE OF SUPERINTENDING ENGINEER,
ST. CATHARINES, ONT., March 31, 1909.

SIR,—I have the honour to report upon the maintenance and operation of the Welland canal and its branches for the fiscal year ending March 31, 1909.

Navigation season.—The canal opened for navigation on April 15, and closed December 17, 1908.

Accidents.—Two serious accidents occurred during the year: On May 22, 1908, the steam barge *D. D. Calvin*, bound up, ran into the upper gates of lock No. 18, carrying them away. While being forced back out of the lock she struck one of the lower gates and carried it away also. Locking was resumed at noon on the 23rd. The *Calvin* was injured and sank on the slope of the bank below the lock, but did not interfere with navigation. She was afterwards towed to Buffalo for repairs.

The steamer *Mary Horton*, bound down, carried away the upper gates of lock No. 13 on July 14, 1908. The break took place during my absence, but the repairs were skilfully carried on by the repair staff in the short time of fifteen hours. My assistant, Mr. W. H. Sullivan, was in charge.

The accident was a peculiar one. The vessel had been lowered in the lock and the lower gates were open for her to go out. The captain gave the signal to 'go ahead,' but the engineer, by mistake, backed up driving the stern of the vessel into the gates behind her.

IMPROVEMENTS, NEW CANAL.

Mr. Joseph Battle completed his contract for building a concrete retaining wall on the east side of the rock cut in Ramey's Bend.

Mr. Battle has commenced work on his contract to build a dock south of the town of Welland.

Mr. W. E. Phin completed his contract for removing the slides, on the Summit level, mentioned in my last report.

Mr. Phin is now engaged in widening the canal about a mile north of Welland by dredging off a point at a narrow place where vessels have had trouble.

The electrical lock gate operating machines mentioned in my last report were all placed in position in the summer of 1908 and have proven very satisfactory.

The improvements to the canal which I considered necessary in the interests of navigation, and which were commenced shortly after my appointment as superintending engineer in December, 1900, are now all practically completed, and the canal is in good working shape and capable of handling traffic with safety and speed.

Vessels which have plenty of room in the locks, such as the *City of Ottawa* and *City of Montreal*, now pass through the canal from lake to lake in nine hours. The large steel freighters are so nearly the full size of the locks that they are very slow in entering and leaving, and take from 12 to 16 hours to pass through the canal.

PORT COLBORNE.

Messrs. Hogan & Macdonnell have made slow progress with clearing up the excavation of the outer harbour. A channel 22 feet in depth, at a time when there is 14 feet on the sill of the lock, is, however, now available to the elevator.

The elevator being built for the Department by Messrs. Peter Lyall & Sons, while not yet completed, is ready for business, and the large lake steamer *Midland Prince*,

SESSIONAL PAPER No. 20

drawing 21 feet 7 inches of water, unloaded 315,000 bushels of wheat in September last, and later on, a similar load.

A railway siding to the elevator is now being constructed by the department.

REPAIRS—NEW CANAL.

In addition to the ordinary repairs to structures on the new canal, the foundation of lock No. 2 was lowered this spring by taking out the old foundation timbers and upper mitre sill and replacing with a concrete foundation at a lower elevation.

The lowering of this foundation does away with the necessity of maintaining the long wall between locks one and two, which has been a source of expense and annoyance for the past twenty years.

The contract for this work was awarded to Messrs. David and William Walker, of Thorold, who placed their plant and put in the cofferdam at the foot of the lock. They were unable to accomplish the unwatering, however, and threw up the contract. I was obliged to complete it with the canal staff, at the contractors' expense.

The foundations of the regulating weirs were all gone over and replanked and concreted where necessary.

The lower hollow quoins of lock No. 15 were re-cut, the walls having gradually settled towards the canal nearly six inches on each side.

REPAIRS—OLD CANAL.

The water was drawn off the old canal March 28, 1909, for the purpose of repairing a few of the weir foundations which were undermined; the heaviest repairs were required at the weirs at locks Nos. 2 and 22.

WELLAND CANAL FEEDER.

The water was drawn off the feeder in August, 1908, and a large concrete culvert built beneath it at Marshville to replace the old wooden one which has not been large enough to pass the water from the ditches for the past several years, since the marsh lands in the vicinity have been settled and drained. The new culvert relieved all flooding this spring.

The ditches along the feeder were all cleaned out and deepened where necessary.

PORT MAITLAND.

Mr. M. J. Hogan has been awarded the contract of renewing the present wooden superstructure of the west pier at Port Maitland with concrete. He will commence work in a short time.

WELLAND SHIP CANAL.

Four parties have been in the field during most of the past year making surveys for a proposed ship canal to connect Lakes Erie and Ontario. At the present time a very favourable line has been found. This line crosses the peninsula at its narrowest point and is almost a straight line from lake to lake. The total length will be about 22 miles, being nearly five miles shorter than the present canal. No estimate has, as yet, been made of the probable cost of construction, as the surveys are not completed. Upon the result of the test borings which are being made, will depend the feasibility of this line, as the heavy structures contemplated will require excellent foundations.

Several alternative routes have been considered, but so far none of them appear to answer all requirements. A line from Morgan's point, four miles west of Port Colborne to the Jordan river looks very favourable, but it would necessitate the use of locks in flight at Jordan and the building of a new harbour on Lake Erie.

9-10 EDWARD VII., A. 1910

Suggestion has been made that the canal should be built between Selkirk on Lake Erie and Hamilton. Another, that it should run between Port Maitland and the Jordan. Another, that the Lake Ontario entrance should be the mouth of the Niagara river. Another, that the present line should be diverted at Port Robinson down the Chippawa creek to near Chippawa, thence across a point into the Niagara river (which would make the Lake Erie terminus in Buffalo harbour). It is, no doubt, possible to build a canal on any of these locations, but it requires very little study of the question to show that such a canal would be a grave mistake, to say nothing of the extra expense that would be involved in its construction.

In considering the project of a Welland ship canal to connect lakes Erie and Ontario the first question which arises is what size shall it be made, that is to accommodate what size of vessels? The only sane answer to this question is that it should be able to accommodate the largest class of vessels that are ever likely to navigate the great lakes. For reasons that are fairly well understood, it is not at all probable that ocean-going vessels of the larger size will ever require to enter the great lakes—they were not built for that class of trade. Occasionally, of course, tramp ocean vessels will continue their voyage to the head of the lakes, but these trips will be the exception rather than the rule. Leaving ocean vessels out of consideration, what is to be the ultimate size of lake freighters?

The growth in the size of these vessels in the past few years has been enormous.

The first Welland canal was completed in 1829, the locks being 100 feet x 22 feet. It carried all the traffic between the two lakes until 1845, sixteen years only. The second canal, opened in 1845, had locks 150 feet x 26½ feet with 9 feet of water on the mitre sills. It had been operated only eight years when it was found to be too shallow, and the lock walls and banks were raised to allow of vessels ten feet draught to pass through. This canal did duty until 1881, thirty-six years, when it was replaced by what is now called the New Welland canal, the locks of which were built 270 feet x 45 feet with 12 feet of water on the sills. The canal was not completed, however, before a change was made, the lock walls and banks being raised to allow vessels drawing 14 feet of water to pass through.

When this canal was commenced in 1871, there were only a couple of vessels on the lakes which could not have passed through it. Before its completion, however, there were a large number of such vessels, and to-day there are hundreds, a great many of them being over twice the length of the locks and one and one-half times the width and depth.

Vessels on the lakes are now slightly over 600 feet in length by 60 foot beam and draw over 21 feet of water.

The length of vessels is limited somewhat by their draught, and it is probable that the present length will not be greatly exceeded until the draught is increased. Channels are being deepened every year between the lakes and it will not be long before 22 feet will be attained at low stages of the water, and a movement is now in force in the United States to deepen the channel from Chicago to Buffalo to 26 feet. This deepening of channels will proceed slowly, as the portions to be deepened will increase greatly in length with the depth attained and places which are now considered open navigation will become 'restricted channels.' The expense of making these channels will be enormous, and there will come a time, perhaps not very far distant, when increased draught will be looked for in the opposite direction, that is by raising the surface level of the lakes, or rather by not allowing them to fall to the present low water levels. This scheme is practical and has been given considerable thought, but the necessity for extra depth has not, as yet, been so apparent as to cause any great move being made in that direction. It is sure to come, however, and it is safe to assume that within the next quarter of a century at the latest there will be 25 or 26 feet navigable depth in the upper lakes. This will mean that ship-builders can increase the length and beam of vessels considerably beyond present dimensions.

GENERAL.

The water in Lakes Erie and Ontario was very high during the first half of the season and quite low during the latter half.

There were no employees superannuated during the year.

No superannuated employees died during the year.

Attached is a statement of moneys collected for damages caused to canal property by different vessels ; also a statement showing the highest and lowest recorded depths of water on the mitre sills of the locks at Port Dalhousie and Port Colborne for each month of the year.

I have the honour to be, sir,

Your obedient servant,

J. L. WELLER,

Superintending Engineer.

M. J. BUTLER, Esq.,

Deputy Minister and Chief Engineer,

Department of Railways and Canals,

Ottawa, Ont.

WELLAND CANAL.

STATEMENT showing the Highest and Lowest Depths of Water on the Lower Mitre Sill, Lock No. 27, New Welland Canal, Port Colborne, for the fiscal year ending March 31, 1909.

Months.	Lower Sill.		Months.	Lower Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1908.	Ft. In.	Ft. In.	1908.	Ft. In.	Ft. In.
April	18 1	17 6	November	16 3	15 7
May	18 9	17 11	December.....	15 8	15 1
June	18 8	18 5	1909.		
July.....	18 7	18 2	January	15 4	15 0
August.....	18 2	17 6	February	15 6	14 9
September.....	17 7	16 10	March	15 8	15 4
October.....	16 11	16 2			

STATEMENT showing the Highest and Lowest Depths of Water on the Upper Mitre Sill, Lock No. 27, New Welland Canal, Port Colborne, for the fiscal year ending March 31, 1909.

Months.	Upper Sill.		Months.	Upper Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1908.	Ft. In.	Ft. In.	1908.	Ft. In.	Ft. In.
April.....	16 8	14 1	November	15 1	13 10
May.....	16 5	15 0	December.....	15 8	13 2
June.....	16 4	15 5	1909.		
July	16 3	15 3	January	14 8	11 10
August	16 0	14 8	February	15 4	11 5
September	16 1	13 8	March	14 9	13 2
October.....	15 1	13 11			

9-10 EDWARD VII., A. 1910

STATEMENT of Damages to Welland Canal property during the fiscal year ending March 31, 1909, and the amount paid on account of said damages.

Date of Damage.	Name of Vessel.	Amount of Damage.	Amount Paid.	Date Paid.	Where Paid.
1908.		\$ cts.	\$ cts.	1908.	
May 22....	Str. 'D. D. Calvin'	2,751 36	2,751 36	May 23...	Port Colborne.
July 14....	" 'Mary Horton'	3,473 10	3,473 10	July 14....	Port Dalhousie.
June 10 ...	" 'Glenellah'	26 75	26 75	Sept. 7....	"
Aug. 7....	Brg. 'Hamilton'	15 38	15 38	Nov. 14 ...	"
Sept. 27....	Str. 'Adele Shares'	25 00	25 00	Sept. 28....	Port Colborne.
Oct. 2....	" 'City of Toronto'	50 00	50 00	Oct. 3....	Port Dalhousie.
Nov. 8....	" 'Soo City'	10 00	10 00	Nov. 11....	"

TRENT CANAL SURVEYS OF ROUTES,
OFFICE OF THE ENGINEER IN CHARGE,
OTTAWA, Canada May 28, 1909.

SIR,—I have the honour to submit my report upon the works under my charge, in connection with the surveys of routes for the Trent canal, for the fiscal year ended March 31, 1909, as follows:—

Gull River improvements.—On May 8, 1908, completed report, estimate and general plan of route for proposed improvements of the Gull river, for navigation purposes—in connection with the Trent waterway system—from Cobocok to a point about a mile above Minden, Ontario.

Transfer of staff.—On July 31, 1908, the five members of my staff were paid off, and transferred to the Hudson Bay Railway Surveys.

Lakes Simcoe and Couchiching to Georgian Bay.—On December 2, 1908, completed and submitted report and detailed estimates for both, 6 feet and 9 feet depth of navigation for proposed Georgian Bay outlets for the Trent canal, from Lakes Simcoe and Couchiching, via Nottawasaga river, Severn river, and Coldwater, respectively.

This report, which was based on full and careful surveys and investigations, comprehended every detail applicable to the merits, &c., of those particular routes.

Plans, &c., Nottawasaga River route.—On March 12, 1909, completed and submitted general plans and profiles of the proposed canal route from Kempenfeldt bay, Lake Simcoe, to the Georgian Bay, via Nottawasaga river.

Black River Improvements.—Subsequent to March 12, 1909, work was in progress on a report of proposed improvements on the Black river, from Lake Simcoe to Sutton, township of Georgina, county of York, Ontario.

I have the honour to be, sir,
Your obedient servant,

(Sgd.) EDMUND J. WALSH, M. Inst., C.E.,
Engineer in Charge.

M. J. BUTLER, Esq.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa.

SESSIONAL PAPER No. 20

ST. LAWRENCE CANALS.

RESIDENT ENGINEER'S OFFICE,
CORNWALL, April 1, 1909.

SIR,—I have the honour to submit my annual report on the works under my direction for the fiscal year ending March 31, 1909.

CORNWALL CANAL.

On June 23, 1908, a serious break occurred in the south bank of canal a short distance above Lock No. 18, washing out about 165 feet in length of canal bank, as well as the pivot pier and swing span of the Ottawa and New York Railway bridge, which crosses the canal at this point.

Temporary repairs were made by building a cribwork dam around the portion of bank destroyed, and widening the canal on the north side by means of dredges, to allow of the passage of vessels. Navigation was resumed on July 10.

A contract was entered into with Mr. Thos. A. Nicholson, of St. Catharines, for the work of permanently repairing this break and strengthening the south bank of canal down to the head of Lock No. 18.

Work was commenced on August 18 and carried on without interruption till December 23, when it was discontinued for the winter.

A heavy concrete wall has been placed across the washout on the canal side of the bank and some earth filling deposited behind it.

Twelve feet, in depth, of stone has been removed from the temporary dam and used to form a stone toe on the river side of the bank to be rebuilt.

The canal was unwatered on March 29, 1909, when work was resumed removing the remainder of the temporary dam and extending concrete wall to connect with the walls at the head of lock No. 18. This work is being prosecuted day and night, to the end that the work necessary to the opening of the canal, may be completed by May 1.

A contract has been entered into with Messrs. J. J. & V. S. Fallon, of Cornwall, for trimming the high north slope of canal above lock No. 21 and placing concrete and stone protection at the water line. Work was commenced on October 19 and carried on till December 9, 1908, when it was discontinued for the season. Fairly good progress was made.

WILLIAMSBURG CANALS.

The work of rebuilding retaining walls along the government ditch at Iroquois, under contract with Mr. Geo. A. Begy, of St. Catharines, and which was partly completed during the season of 1907, was resumed in April, 1908, and carried to completion on August 18, 1908.

The final estimate for this work has been completed and sent to the department.

MURRAY CANAL.

The work of placing concrete superstructures on the entrance piers at both ends of this canal, under contract with Mr. R. Weddell, of Trenton, and which was in progress during the seasons of 1906 and 1907, was completed in a very satisfactory manner early in November, 1908.

The final estimate for this work has been prepared and sent to the department.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) C. D. SARGENT,

Resident Engineer

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer,

Department of Railways and Canals,

Ottawa, Ont.

9-10 EDWARD VII., A. 1910

TRENT CANAL.

PETERBOROUGH, May, 28, 1909.

SIR,—I have the honour to submit herewith my annual report of the maintenance and operation of the Trent canal for the year 1908-9.

The extent of the canal completed is the same as last year, viz., 160 miles.

Navigation opened and closed on the different stretches, as follows :—

Division extending from Lake Simcoe to Balsam lake, opened May 16, closed October 7.

Division extending from Balsam lake to Lakefield, opened April 16, closed November 5.

Division extending from Lakefield to Peterborough, opened May 15, closed November 5.

Division extending from Peterborough to Healey's falls, opened May 23, closed November 14.

The following work was carried out during the year :—

Rice Lake.

The lighthouses on Rice lake were repaired.

Otonabee River.

The buoys were replaced in position and repainted.

Peterborough Lock (No. 7).

The storehouse and fences at this point were repainted.

Peterborough Hydraulic Lift-lock.

The Peterborough hydraulic lift-lock worked smoothly throughout the year. Some repairs were made thereto, including the placing of new rubber air tubes, and the installation of new chain tighteners on the upper and lower lockgates. The rams were repacked. A clay core was put in the banks above and a certain amount of old drain tile was removed.

Peterborough to Lakefield.

Between one and two miles of fencing were built on this section, and the fences re-painted.

The steamboat channel between locks 1 and 2 was dredged.

Lakefield.

A new concrete wharf, 80 feet in length was built, at the southern limits of the village, below lock No. 1. The wharf was filled with stone and gravel. This wharf should afford excellent accommodation to the industries of Lakefield, in shipping materials and produce to Peterborough and other points to the south of Lakefield.

A new concrete wharf 523 feet was built in the upper part of the village, on Lake Katchewanoe. This is the point where a great deal of the traffic to Stony lake and other points emanates. The wharf is backed with stone and gravel, requiring 800 cords of stone, and 500 yards of gravel. The government ground in the vicinity has been cleared up, and the appearance of the government property generally improved.

Three new piers for entrance booms to the government slide were built at Lakefield. New booms were also placed in position.

SESSIONAL PAPER No. 20

Lake Katchewannoe.

The greater portion of the booms between the steamboat channel and the log channel, between Young's point and Lakefield was renewed. Fifty new pieces were placed in position.

Stony Lake.

A new wharf was built at Juniper island. This wharf was built of timber filled with stone. A portion of this wharf is 18 feet in width, and the remainder of it is 12 feet in width. Its length is 125 feet.

A number of private wharfs, that became submerged, by reason of the action of the department in raising the water level in Stony lake, for navigation purposes, were raised proportionately.

The steamboat channel in Stony lake were re-buoyed out.

Burleigh Falls.

Considerable work was done at this point in the line of rebuilding portions of the piers at the dam.

Bridgenorth.

A landing pier at Chemong was built. New booms were placed across the upper end of the lake, to prevent a large number of island bogs from floating down and interfering with navigation.

Pigeon River.

The steamboat channel from Pigeon lake to the village of Omemee was dredged out.

Bobcaygeon.

A new house for the lockmaster was built at Bobcaygeon.

Scugog River.

The lighthouses on Scugog river, between Lindsay and Sturgeon lake, were repaired and painted. The buoys were replaced in position and painted. The channel from the river to Sturgeon lake was dredged for a distance of several hundred feet. The Scugog river was cleared of sunken logs.

Lindsay.

Lindsay street bridge was painted. Minor repairs were made to Wellington street bridge, but a contract has since been let for a new bridge at this point. There were certain minor repairs made to Lindsay street south bridge.

Sturgeon Lake.

A new landing pier was built at Pleasant Point.

Fenelon Falls.

The upper entrance to the lock at Fenelon Falls was dredged and deepened from a depth of 5 feet to 9 feet, for a distance of 800 feet. The width of this channel is now 50 feet.

A new house for the lockmaster was built at this point.

The bridges, office and lockgates (above the water level) were painted.

Rosedale.

A new house for the lockmaster was built here. The swing bridge was painted.

Balsam Lake.

The buoys were replaced in position and were repainted.

9-10 EDWARD VII., A. 1910

From Balsam Lake to Kirkfield.

The bridges, at Portage road, Victoria road, and the Grand Trunk Railway bridge were painted.

Kirkfield.

A great deal of work was carried out at this place during the past year. Two new lockhouses, for the accommodation of the lockmaster and his assistant were built. They are of natural limestone.

Owing to the fact that there is no foundry or machine shop near Kirkfield, we found it necessary to erect a machine shop of our own at this point to carry out repairs, that from time to time, are required in connection with the hydraulic lift lock. A new machine shop has been completed and equipped with lathe, drills, &c. A power-house has been erected adjacent thereto, in which is installed a 20-inch double turbine wheel, providing 120 horse-power. We have also installed an air compressor, which constitutes an auxiliary pumping plant for the lift lock.

Balover.

A shelter for the bridge tender was erected and painted. The bridge was replanked, and the fence on the Portage road, near this point was repainted.

Boundary Road Bridge.

The shelter for the bridge tender was re-painted, the bridge was replanked, and the fence on the south side of the canal was re-painted.

From Lock 1 to Lock 2.

Two valves were placed in the east end of the gate, on the north side, all the iron work on the locks and gates was re-painted, and the lockhouse was re-painted.

From Lock 2 to Lock 3.

One thousand one hundred and sixty-five feet of new rip-rapping was constructed between dam 3 and lock 1. About 200 feet of tile drain was placed on the north side of the canal, below the lock to carry off the water from the spring on the side of the canal bank. Minor repairs were carried out to two gates at Lock 2, the iron work on lock, gates and dam was repainted.

From Lock 3 to Dam 3.

All the iron work on the lock and gates, at lock 3 was repainted. The ground around the lockhouse was sodded, the banks levelled and seeded on the north side of the canal, and on a portion of the south side of the canal, as far as Kean's bridge. All the rip-rapping was overhauled, and put in first-class condition.

From Lock 4 to Lock 5.

The iron work on the lock and gates was repainted, 200 feet of drain tile was laid between the lock-house and the canal.

From Lake Simcoe to Lock 5.

The bridge across the entrance of the canal, at Lake Simcoe was replanked and painted, and the fence at both ends of the bridge was painted. The fence on both sides of the canal was repaired. The buoys in Lake Simcoe, at the entrance of the canal, were repainted.

In addition to this work at various points on this division, a great amount of work was accomplished in the matter of cleaning up drowned lands. The construction of the canal at this point resulted in the submerging of a great quantity of partially timbered land. A great deal of floating timber and debris has accumulated on different

SESSIONAL PAPER No. 20

portions of this division, and necessitated an expenditure of considerable money in keeping the steamboat channel cleared.

Reservoir Waters.

There is in connection with the Trent canal, what is known as 'reservoir waters,' which consist of numerous rivers and streams, not on the route of, but tributary to the canal. Dams have been built at the outlet of many of the lakes on these streams, and the water is conserved until such times in the dry summer and fall season, as it may be required on the canal for navigation and power purposes. Considerable work was done on these waters during the past year, as the following will show :—

Gull River.

Cushog lake.—The dam at this point was rebuilt with timber.

Mud lake.—The dam was rebuilt with timber.

Hawk lake.—A new shelter for the caretaker on these waters was built here. Hawk lake is a depot for the Gull river waters.

Keneese lake.—The caretaker's shelter at this point was destroyed by fire. We are preparing to rebuild this shelter.

Burnt River.

Stormy creek.—Two new slides were built on this creek.

Big Bear lake.—Minor repairs were carried out to the dam at this point.

Otter lake.—A fine, new, concrete dam was built at Otter lake.

Drag lake.—New iron winches, new stop-logs and a new platform were placed on the dam.

Nogie's Creek.

Depot dam.—A new timber dam was built here.

Mississauga.

Scott's dam.—New stop-logs were provided, and minor repairs were carried out.

Eagle lake.—The slide was repaired.

Bottle lake.—Minor repairs were carried out.

Deer Bay Creek.

Louck's lake.—A new timber dam was built at Louck's lake.

Eel's lake.—Two small dams were built on this creek.

Plant.

A great deal of new work was done during the year in connection with the up-keep of our plant. A small steam tug was built and is now rendering good service. Our scows were repaired and placed in good order.

Last fall fire broke out on board the tug *Bessie Butler*, while at Lakefield, doing considerable damage. She has since undergone extensive repairs.

The tug *Bessie Butler* was engaged in general work and assisted in carrying a large quantity of cement for the engineer's department, for construction work at Buckhorn and Rosedale.

The tug *Bob Hall* was engaged pretty much on the Balsam lake, Lake Simcoe division, assisting in cleaning the drowned lands at that division.

The *Empire* was engaged with the dredge *Emmerson* throughout the year.

The *Sovereign* was engaged in painting buoys and towing materials on Stony lake to wharfs under construction.

9-10 EDWARD VII., A. 1910

GENERAL.

There were no accidents on the canal during the year and the traffic was the largest in the history of the canal. For the greater portion of the year the water was kept at its usual uniform level, but late in the fall the effects of the exceptionally dry season were felt, and in some of the lakes and rivers a larger flow of water would have been appreciated. However, neither steamboat nor power interests suffered to any serious extent.

The entire staff worked faithfully throughout the year, each employee contributing his share to the success of the season's operation.

I am, sir,

Your obedient servant,

J. H. McCLELLAN,
Superintendent.

M. J. BUTLER, Esq., C.E.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa, Ont.

DEPARTMENT OF RAILWAYS AND CANALS.

SUPERINTENDING ENGINEER'S OFFICE,

PETERBOROUGH, May 26, 1909.

TRENT CANAL.

DEAR SIR,—I have the honour to submit my annual report for the fiscal year ended March 31, 1909, covering the work of construction chargeable to 'capital.'

ROSEDALE SECTION.

A contract for the construction of this section was entered into with the Randolph Macdonald Company, Limited, on February 24, 1908. This section connects Balsam and Cameron lakes and is about 1.8 miles long between the contours of 9 feet depth of water in the respective lakes. The new lock is being built to the same dimensions as those of the Ontario-Rice Lake division. The new dam will be built of concrete, and the canal forming the upper and lower entrance channels of the lock will be finished in a first-class manner.

The total value of work done and materials delivered up to March 31, 1909, is \$90,463. The quantities of the principal items of work done are : earth, 138,000 cubic yards, loose rock, 3,800 cubic yards, solid rock, 2,800 cubic yards, and concrete, 4,740 cubic yards. The contractors had working last season, one dredge and two steam shovels. At the close of last season, a good part of the canal across the neck of land between the two lakes was excavated to grade and the slopes dressed down. The lock is about 50 per cent completed.

BOBCAYGEON SECTION.

The contract entered into with Messrs. McCoy and Wilford, Limited, on December 3, 1907, for the construction of a new dam at the lower end of the Little Bob river was finished last fall and a final estimate amounting to \$40,943.70 for the work was returned last January. The new dam is built about 140 feet below the old wooden

SESSIONAL PAPER No. 20

one. Since the completion of the new dam, the municipality of Bobcaygeon have built for power and lighting purposes a small hydro-electric plant, in rear of one of the 25-foot sluices of the dam. The plant began running about January 1, 1909. There is a working head of about 7 feet at this point during the summer levels of Sturgeon and Pigeon lakes.

BUCKHORN SECTION.

The contract entered into with Messrs. E. and D. Conroy on July 2, 1907, for the construction of a new dam and bridge at Buckhorn was completed last fall, and a final estimate amounting to \$54,443.51 for the work was returned last March.

The reinforced concrete highway bridge across the dam was placed in commission on October 9, 1908.

The new dam and bridge were built immediately in rear of the old wooden structures, which were torn down after the new ones were finished.

LINDSAY SECTION.

Last summer a survey was made of the Scugog river at Lindsay, preliminary to the preparation of plans and specification for a new lock and dam at Lindsay, and a new swing bridge across the river at Wellington street. The work was advertised last October, and a contract for it entered into with Messrs. John Ritchie & Co. on January 20, 1909.

The total value of work done and materials delivered up to March 31, 1909, was \$863.72. As soon as high water subsides, the contractors will proceed vigorously with the construction of the lock and dam, which will likely be in commission this fall.

HOLLAND RIVER DIVISION.

This division is divided into two sections. Section No. 1 extends from Cook's bay, Lake Simcoe to Holland landing on the east branch of the Holland river, a distance of 8½ miles; and section No. 2 from Holland landing to Newmarket a distance of 4½ miles. The whole of section No. 1 is on the Lake Simcoe level, and the total rise between Holland landing and Newmarket is 43 feet, which will be overcome with three locks.

Section No. 1.—A contract for the construction of this section, chiefly dredging, was entered into with the Lake Simcoe Dredging Company on August 30, 1906.

The company had only dredged 12,392 cubic yards of material at the close of the season of 1907, when they practically abandoned the work. The department took the work out of their hands in May, 1908.

A final estimate in favour of the Lake Simcoe Dredging Company, amounting to \$2,465.20 for the work done was sent into the department in October, 1908.

This section has not been re-let.

Section No. 2.—A contract for the construction of this section was entered into with Mr. John Riley, on February 12, 1908, and assigned by him to Messrs. Russell, Dill and Lothian, on February 19, 1908, and by them to the York Construction Company, Limited, on April 3, 1908, who are carrying on the work.

The total value of work done and materials delivered up to March 31, 1909, was \$158,174.10. The quantities of the principal items of work done are as follows: earth 347,000 cubic yards, concrete 750 yards, piles driven 15,310 lineal feet, stone protection 4,600 cubic yards and puddle 12,740 cubic yards. The foundation for lock and dam No. 3 located about one mile below Huron street, Newmarket, has been taken out and the piles for the foundation of the lock driven. This lock and dam will be built this season, for which purpose the contractors have on the ground a very complete concrete plant. Gravel for concrete will be brought in by train from a Grand Trunk Railway gravel pit west of Allandale. About 40 per cent of the excavation on the section has been finished. The contractors have on the ground one steam shovel, and are erecting

9-10 EDWARD VII., A. 1910

on the Lake Simcoe level, a cableway to take out the canal prism between the end of section No. 1 and lock No. 1, which is located at Yonge street, Holland landing.

Queensville Road Bridge.—This bridge crosses the east branch of the Holland river, about two miles north of Bradford road, Holland Landing. A contract for the substructure of the bridge was entered into with Messrs. D. Conroy & Sons on December 1, 1906, and was finally completed by them last June. A final estimate for the work amounting to \$18,212 was sent to the Department last January.

A contract for the superstructure of this swing bridge was entered into with the Dominion Bridge Company, on October 12, 1906, for \$4,872, which they finally completed on August 21, 1907.

The contractors for the substructure made up the approaches to the bridge in fall of 1907, sufficiently wide and high to permit of the public using the bridge during the winter of 1907-8, and as stated above the whole of this work was finally completed in June, 1908.

ONTARIO—RICE LAKE DIVISION.

This division extends from Rice lake to Trenton, on Lake Ontario, a distance of 56 miles, with a fall of 369 feet between the lakes. For construction purposes the division has been divided into seven sections, five of which are under contract,—

Section No. 1.—This section extends from Trenton to Glen Millar, a distance of about $4\frac{1}{4}$ miles, on which length of river there are 3 locks and dams.

A contract for the work was entered into with Messrs. Larkin & Sangster on March 10, 1908, and the total value of work done and materials delivered up to March 31, 1909, amounted to \$294,781.25. The principal items of work done are: earth, 191,939 cubic yards; loose rock; 3,189 cubic yards; solid rock, 82,887 cubic yards, and concrete, 15,364 cubic yards. At the close of last season, the contractors had the pits for locks 2 and 3 nearly excavated. The upper entrance piers of lock 3, and the core wall of the embankment forming the canal above the lock were partly built. The east half of dam No. 2 was built up to the level of the foot bridge across the top of the dam.

At the east end of the Glen Millar highway bridge, a span of the bridge was taken out and the substructure built for a swing span, the superstructure of which was erected last winter by the Hamilton Bridge Works Company and the bridge opened for traffic at the end of February, 1909.

The contractors have two steam shovels on the work, besides a large concrete plant, &c.

Section No. 2.—This section extends from Glen Millar to Frankford, a distance of about $4\frac{1}{2}$ miles. There are three locks and dams on the section.

A contract for the work was entered into with Messrs. Dennon and Rogers on May 30, 1908, and the total value of work done and materials delivered up to March 31, 1909, amounted to \$74,643.73. The principal items of work done are: earth, 23,128 cubic yards, loose rock, 3,786 cubic yards; solid rock, 27,368 cubic yards, and concrete, 7,353 cubic yards. The excavation for the pit of lock No. 6 has been taken out and the concrete work of dam No. 6 has been finished with the exception of the foot bridge across the dam. Some excavation for the canal connecting dam and lock No. 6 has been done, and a little excavation has been done in the pit for lock No. 5.

The work on this section last season was not carried on very energetically.

Section No. 3.—This section extends from Frankford to a point 3 miles west of Glen Ross, a distance of $7\frac{1}{2}$ miles. At Glen Ross there is a lock of 9 feet lift.

A contract for the work was entered into with the Canadian General Development Company, Ltd., on April 24, 1908, and the total value of work done and materials delivered up to March 31, 1909, amounted to \$123,159.81. The principal items of work done are: earth, 9,613 cubic yards; loose rock, 3,910 cubic yards; solid rock, 68,317 cubic yards; concrete, 2,883 cubic yards. The excavation for the lock pit is

SESSIONAL PAPER No. 20

finished ready to begin laying concrete, and the rock cut forming the upper and lower entrances of the lock is nearly finished. The pivot piers and abutments for the highway swing bridge across the head of the lock, and also those for the Central Ontario swing bridge across the canal at this point were built last fall and the Hamilton Bridge Works Company erected the superstructures on them this spring. The Central Ontario Bridge was placed in commission on April 29, 1909, on which date the first train crossed the bridge. The road bridge is also ready for use, but the approaches of the bridge are not finished. The concrete dam across the river at this point was finished last fall.

Section No. 4.—This section extends from the west end of No. 3 to the east end of No. 5, or from Adam's Landing, Bradley bay to the town of Campbellford, a distance of about 14 miles. There will probably be 5 locks and 3 dams on this section but the plans, &c., for the work are not finished, as the route of the canal through Campbellford has not been decided upon.

Section No. 5.—This section extends from the highway bridge across the river in Campbellford to the lower end of Crow bay, a distance of 3 miles. On the section are two locks and dams.

A contract for the work was entered into with Messrs. Brown & Aylmer on September 28, 1907, and the total value of work done and materials delivered up to March 31, 1909, was \$248,386.44. The principal items of work done are, earth, 24,490 cubic yards; loose rock, 7,420 cubic yards; solid rock, 23,965 cubic yards and concrete, 24,130 cubic yards. The lock and dam at Middle Falls are each nearly finished and the concrete work of the dam at Stephens rapids is about 85 per cent finished. Some the concrete excavation was done on Crow bay last summer where a Lobnitz rock breaker, and dredge worked about half the season. This plant was built on Crow bay during the winter of 1907-8, and launched early last summer. No work has been done on the lock below the dam at Stephens rapids.

At Middle Falls the municipality of Campbellford are building a hydro-electric power plant, alongside the new lock. The head at this point is 25 feet and the low water flow of the river about 2,000 cubic feet per second.

At Stephens dam, the Seymour Power and Electric Company began last winter the construction of hydro-electric plant on the east side of the river about 1,000 feet below the dam. The head at this point is 23 feet and the low water flow of the river about 2,000 cubic feet per second.

Section No. 6.—This section extends from the lower end of Crow bay to 1,000 feet west of Healy Falls bridge, a distance of 3.1 miles. The plans and specifications for this work have been finished. Between Crow bay and the pool above the bridge, the river falls 76 feet, which height will be overcome by 3 locks located on the west bank of the river. A new dam will be built between the falls and the highway bridge.

Section No. 7.—This section extends from Healey Falls bridge to Rice lake, a distance of 19½ miles. The principal works consist of considerable rock and earth dredging in the river, a new lock and dam at Hastings, and a new swing bridge at Trent bridge.

A contract for the work was entered into with the Randolph Macdonald Company, Ltd., on January 4, 1909. The company are now building a dredge and scows at Hastings, and preparing generally to proceed with the work this season.

GENERAL.

Bridges.—A contract was entered into with the Hamilton Bridge Works Company, Ltd., on October 10, 1908, for the manufacture and erection of six highway swing bridges and one railway swing bridge.

9-10 EDWARD VII., A. 1910

The highway swing bridges at Glen Millar and Glen Ross on the Ontario Rice Lake division, and at Green Lane on the Holland River division have been finished and placed in commission. The swing span for the Central Ontario Railway at Glen Ross has also been finished and placed in commission. The other three highway spans are fabricated, and stored in the company's yards at Hamilton ready for shipping when required.

'Waggon' Valves.—A contract was entered into with the Dominion Bridge Company, Ltd., on October 5, 1908, for the manufacture and erection of 'Waggon' valves for the new locks of the canal. The company has a large part of the steel and iron fabricated and assembled in their yards at Lachine, Que. The valve frames for the Middle Falls and Rosedale locks have been erected in the lock walls.

The 'Waggon' valve is a modified type of the 'Stoney' valve. It may be described as an iron gate mounted on two pairs of large wheels, which travel upon rails bolted to a rigid steel frame embedded in the side walls of the wells formed over the culverts in the concrete walls of the locks. The characteristics of the valve are these; that the bearing is always on the rails through the wheels; that the vertical and horizontal top water seals are made by adjustable bronze plates which make a planed surface contact with the faced sides of the steel cast guide rails. The water seals do not make the valve absolutely water tight. The skin face of the valve is on the up-stream side, or back of the valve. The valves are erected on the down-stream side of the valve wells, and they can be taken out for repairs and replaced without the aid of a diver or disturbing their operating winches at the top of the wells. The valves are 4 feet wide by 5 feet high and are designed to work under heads varying from 4 to 40 feet.

Lock Gate Operating Machines.—A contract for the supply and delivery of the operating machinery, anchorage fittings, and pivots for the lock gates of the new locks was awarded this spring to Herbert B. Collier, Peterborough, Ont. The work is now being proceeded with, and part of the above material has been delivered for the Middle Falls and Rosedale locks.

Cement.—Over fifty-eight thousand barrels of Portland cement were used last year in connection with building the new locks, dams, bridges, &c., of the canal. The cement was supplied under contract with the following companies: Belleville Portland Cement Company, Canadian Portland Cement Company, Hanover Portland Cement Company, Lakefield Portland Cement Company, and the Lehigh Portland Cement Company.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) ALEX. J. GRANT,
Superintending Engineer.

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer,

Department of Railways and Canals,

Ottawa, Ont.

ST. LAWRENCE CANALS.

SUPERINTENDING ENGINEER'S OFFICE,

CORNWALL, May 26, 1909.

SIR,—I have the honour to submit my annual report upon works of construction and survey in connection with the enlargement of the Ontario St. Lawrence canals, for the fiscal year ending March 31, 1909.

GALOPS CANAL.

UPPER ENTRANCE SECTION.

This contract was awarded to Messrs. Murray & Cleveland in November, 1888, and was entirely completed on October 23, 1907.

A progress final estimate was prepared and returned on March 31 last. The final estimate which is being prepared in the Cornwall district office will be completed by the end of July next. A number of claims which have already been submitted to the department, will require to be adjusted before the contract is definitely settled.

RIVER ST. LAWRENCE.

REMOVAL OF SHOALS IN RIVER WEST OF UPPER ENTRANCE OF GALOPS CANAL.

This contract was awarded to Mr. M. A. Cleveland on July 25, 1907.

The dredging operations were resumed on April 13, 1908, and interrupted from July 2 to 27, 1908, when the dredge was engaged on the Cornwall canal in forming a temporary channel opposite the break in the canal bank.

Another interruption from October 12 to 16, 1908 occurred, when the dredge was occupied in removing boulders and obstructions in the bottom of the North Channel.

The excavation for the improvement of the channel turned out to be much more difficult than anticipated, consequently slow progress was made.

A drilling scow is being fitted out to drill and blast the rock in situ immediately west of the upper entrance section.

It is expected that this contract will be completed by next September.

NORTH CHANNEL.

The contract for this work was awarded to Mr. M. A. Cleveland and commenced on May 14, 1897, and completed on October 1 to 1908.

From September 18 to October 15, 1908, the sweeping of the bottom of the channel was proceeded with and all boulders and obstructions were removed by dredge, thus satisfactorily completing this contract.

A final estimate of the work was prepared in the Cornwall district office, completed and sent to the department on November 6, 1908.

A number of claims arising out of some material changes made in the original contract for this work, still remain to be presented to the department for adjustment.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) L. N. RHEAUME.

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer,

Department of Railways and Canals,

Ottawa, Ont.

Engineer in Charge.

Ontario St. Lawrence Canals.

9-10 EDWARD VII., A. 1910

SAULT STE. MARIE CANAL.

ENGINEER'S OFFICE,

SAULT STE. MARIE, ONT., May 11, 1909.

SIR,—I have the honour to submit my annual report on the improvements in progress to the upper entrance of the Sault Ste. Marie canal for the fiscal year ending March 31, 1909.

DREDGING—UPPER ENTRANCE.

The deepening and widening of the upper entrance as laid down on the plan of improvements was divided into three contracts.

The first contract was entered into with Messrs. John and Henry Hickler for the westerly section, and was brought to a satisfactory completion November 1, 1904.

The second contract was entered into with Mr. C. S. Boone for the easterly section, comprising that portion of the channel way from the east end of the entrance piers, extending westerly one and one-tenth miles. The conditions of this contract required that a depth of 21 feet 5 inches at low stage water be secured, and from a width of 250 feet at the entrance piers widening out to 500 feet as shown on the plan of work. The work was brought to a satisfactory completion November 28, 1907.

The third contract was entered into with Mr. C. S. Boone, May 11, 1907, for the middle section, which consists of the deepening and widening through what is known as the Vidal shoal and is situated two miles above the lock. The conditions of the contract require the channel to be deepened to 21 feet 5 inches at low stage of water and a width of 500 feet be secured throughout. Work was first started on the north half which included the principal part of the widening to the old channel. This portion of the work has been dredged and cleaned up to the required depth, and on October 13, 1908 was opened to navigation. Upon the completion of the north half work was immediately started on the south half, which consists chiefly of deepening the old channel way. Good progress has so far been made and it is hoped to bring this work to a completion during the season of 1909. The quantity to be removed is small taking into consideration the area to be dredged over.

Extension to South Pier, Upper Entrance.—A contract was entered into with Messrs. Wright & McPhail for the construction of an extension of 40 feet to the westerly end of the new concrete pier on the south side of the canal. A satisfactory piece of work was brought to completion, September 15, 1908.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) F. B. FRIPP.

Engineer in Charge.

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer.

Department of Railways and Canals,

Ottawa.

SAULT STE. MARIE CANAL

SUPERINTENDING ENGINEER'S OFFICE,

SAULT STE. MARIE, ONT., April 20, 1909.

SIR,—I have the honour to report upon the maintenance and operation of the Sault Ste. Marie canal for the fiscal year ending March 31, 1909.

The canal was opened for traffic on April 21, 1908, and closed on December 15, having been in operation for 235 days. Traffic was interrupted for one day while a valve rod was being repaired.

There was a very considerable falling off in traffic during the last season, caused by the general depression throughout the country, but it is interesting to notice that while the total registered tonnage shows a falling off of 21 per cent the registered tonnage of Canadian vessels increased about 12 per cent.

The usual exchange of ship's reports was made with the St. Mary's Falls canal from which a statistical report has been compiled and published by the United States canal authorities, of the traffic passing this point, and from which the following statement is derived.

Year.	Number of Vessels passed.	Registered Tonnage of Vessels.	Total Freight Tonnage.	Cost of carrying per Mile Ton.	Estimated Value of Freight carried.	Percentage of Freight carried in Canadian Vessels.	Number of Passengers.
				Mills.	\$	p. c.	
1855.....	193	106,296	14,503	.....	.....	.....	4,270
1860.....	916	403,657	153,721	.....	.....	.....	9,230
1865.....	997	409,062	181,638	.....	.....	.....	19,777
1870.....	1,828	696,826	539,883	.....	.....	.....	17,153
1875.....	2,023	1,259,534	833,465	.....	.....	.....	19,685
1880.....	3,503	1,734,890	1,321,906	.....	.....	.....	25,766
1885.....	5,380	3,035,987	3,256,628	.....	.....	.....	36,147
1890.....	10,557	8,454,435	9,041,213	1·3	162,214,948	3·5	24,856
1891.....	10,191	8,400,685	8,888,759	1·35	128,178,208	4·0	26,190
1892.....	12,580	10,647,203	11,214,333	1·31	135,117,267	3·8	25,896
1893.....	12,008	8,949,754	10,796,572	1·1	145,436,957	4·1	18,869
1894.....	14,491	13,110,366	13,195,860	·99	143,114,503	3·5	27,236
1895.....	17,956	16,806,781	15,062,580	1·14	159,575,129	3·75	31,656
1896.....	18,615	17,249,418	16,239,071	1·0	196,146,842	3·0	37,066
1897.....	17,171	17,619,923	18,982,755	·83	218,235,927	3·0	40,213
1898.....	17,761	18,622,764	21,234,634	·79	233,062,739	2·2	43,426
1899.....	20,255	21,958,347	25,255,810	1·5	281,364,750	3·1	49,082
1900.....	19,452	22,315,834	25,643,073	1·18	267,611,959	3·0	58,555
1901.....	20,041	24,626,976	28,405,065	·99	289,906,865	4·0	59,663
1902.....	22,659	31,955,582	35,961,146	·89	358,306,300	4·0	59,377
1903.....	18,596	27,736,444	34,674,137	·92	349,405,014	6·0	55,175
1904.....	16,120	24,364,138	31,546,106	·81	334,502,686	6·0	37,695
1905.....	21,679	36,617,699	44,270,680	·85	416,965,484	5·0	54,204
1906.....	22,155	41,098,324	51,751,080	·84	537,463,454	5·0	63,033
1907.....	29,437	44,087,974	58,217,214	·80	569,830,188	5·0	62,758
1908.....	15,181	31,091,730	41,390,557	·69	470,141,318	7·0	53,287

ACCIDENTS, DAMAGES AND REPAIRS.

The steamer *A. E. Nettleton*, of the Wilkinson Transportation Company, struck in the lower entrance on September 2, seriously damaging her bottom. The obstruction proved to be some boulders lying about 50 feet outside of the channel to the south, but in a course usually taken by vessels, as it had generally been supposed that

9-10 EDWARD VII., A. 1910

there was a sufficient depth of water to the south of the channel. These boulders have since been removed.

On September 29, the steamer *Lyman C. Smith*, of the L. C. Smith Transit Company, struck the south upper entrance pier damaging the pier to the extent of \$124.83, which amount has since been paid. The steamer struck on her starboard bow, made a large hole in her side and sank, almost completely blocking the channel; but by filling her after tanks and thus raising her bow, they were able, with their own power, to pull the bow around to the south pier and thus clear the channel after it had been blocked for nine hours. The cost of damages and other charges to the vessel was in the neighbourhood of \$25,000.

On November 5, the steamer *Wexford*, of the Western Transportation Company struck the south upper entrance pier in the same place as it had been struck by the *Lyman C. Smith*, without doing serious damage to the pier, but putting the vessels to an expense of \$8,500.

This pier was struck on several other occasions during the season, by unknown vessels, as indicated by marks on the pier, and these incidents would suggest the necessity of giving more accommodation for vessels approaching the canal from the west.

On September 20, the rod of the upper valve on the north side of the lock broke, necessitating the unwatering of the lock, on September 23, to make the repairs. Navigation was discontinued from 6.30 p.m., on the 22nd, to 10.35 p.m., on the 23rd.

On October 31 the same valve rod broke, and owing to the lateness of the season and the lightness of the traffic, the lock was operated for the remainder of the season without this valve.

GENERAL.

The improvement to the grounds by levelling down the spoil banks, which has been carried on for some time, was continued during last season, and it will take about another season to complete this work.

A number of trees were set out and the lawn was extended and improved.

The movable dam was scraped and partly painted. This work will be completed this spring.

The largest cargo on record to pass this point, consisting of 13,978 tons of iron ore, passed through the Canadian canal on September 12 last.

A comparative statement of the traffic through this canal from the date of its opening to the present time is attached.

I have the honour to be, sir,

Your obedient servant,

J. W. LEB. ROSS,
Superintending Engineer.

M. J. BUTLER, Esq., C.E.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa.

SESSIONAL PAPER No. 20

SAULT STE. MARIE CANAL.

COMPARATIVE STATEMENT since opening of lock, September 9, 1895.

	Season.	Increase or decrease over previous season.	Season.	Increase or decrease over previous season.	Season.	Increase or decrease over previous season.
	1895.		1896.		1897.	
Period open.....	{ Sept. 9.... Dec. 6....		May 7.... Dec. 10....		April 21.... Dec. 14....	
Canadian registered tonnage.....	125,240		586,571	461,331	398,343	-188,228
U. S. registered tonnage.....	623,131		3,810,794	3,187,663	3,406,018	-404,776
Total tonnage.....	748,371		4,397,365	3,618,994	3,804,361	-593,004
Lockages.....	698		3,042	2,344	2,976	-66
Vessels passages.....	1,193		5,189	3,996	4,376	-813
Time passing lock.....	212 h. 27 m.		984 h. 22 m.	771 h. 55m.	684 h. 11 m.	300 h. 11m.
Average time lockage.....	18 26 m.		18.42 m.		13.97 m.	
	1898.		1899.		1900.	
Period open.....	{ April 11.. Dec. 9....		April 26.... Dec. 20....		April 23.... Dec. 16....	
Canadian registered tonnage.....	403,331	4,988	561,759	158,428	579,528	17,769
U. S. registered tonnage.....	2,354,606	1,051,412	2,388,441	33,835	1,616,139	-772,392
Total tonnage.....	2,757,937	1,046,424	2,950,200	192,263	2,195,667	-754,533
Lockages.....	2,520	456	2,610	90	2,205	405
Vessels passages.....	3,712	664	3,820	108	3,163	657
Time passing lock.....	609 h. 30 m.	74 h. 40 m.	643 h. 16 m.	33 h. 46 m.	541 h. 24 m.	101 h. 52m.
Average time lockage.....	14.51 m.		14.78 m.		14.73 m.	
	1901.		1902.		1903.	
Period open.....	{ April 20.. Dec. 21....		April 1.... Dec. 20....		April 2.... Dec. 13....	
Canadian registered tonnage.....	776,331	196,803	1,366,087	589,756	1,616,385	250,298
U. S. registered tonnage.....	1,672,431	56,492	3,238,069	1,565,438	3,145,020	93,049
Total tonnage.....	2,448,962	253,295	4,604,156	2,155,194	4,761,405	157,249
Lockages.....	2,506	701	3,418	512	3,242	176
Vessel passages.....	4,243	1,080	5,169	926	4,418	751
Time passing lock.....	724 h. 38 m.	183 h. 14m.	925 h. 57 m.	201 h. 19m.	883 h. 10 m.	42 h. 47 m.
Average time lockage.....	14 96 m.		16.25 m.		16.34 m.	
	1904.		1905.		1906.	
Period open.....	{ April 30.. Dec. 26....		April 10.... Dec. 20....		April 10.... Dec. 20....	
Canadian registered tonnage.....	1,557,335	59,050	1,799,336	242,001	1,959,186	159,850
U. S. registered tonnage.....	2,673,090	471,930	3,739,224	1,066,134	4,399,990	660,766
Total tonnage.....	4,230,425	530,980	5,538,560	1,308,135	6,359,176	820,616
Lockages.....	3,012	230	4,031	1,019	4,152	121
Vessel passages.....	4,092	326	5,853	1,761	5,913	60
Time passing lock.....	811 h. 28 m.	71 h. 42 m.	1060 h. 38 m.	249 h. 10m.	1131 h. 23 m.	70 h. 45 m.
Average time lockage.....	16.16 m.		15.79 m.		16.35 m.	
	1907.		1908.			
Period open.....	{ April 22.. Dec. 15....		April 21.... Dec. 15....			
Canadian registered tonnage.....	2,288,349	329,143	2,536,552	268,203		
U. S. registered tonnage.....	9,887,633	5,487,643	7,038,389	-2,849,244		
Total tonnage.....	12,175,982	5,816,786	9,594,941	-2,581,041		
Lockages.....	4,596	444	3,607	-929		
Vessels passages.....	6,153	210	5,344	-809		
Time passing lock.....	1378 h. 58 m.	247 h. 35m.	1258 h. 50 m.	120 h. 08m.		
Average time lockage.....	18.10 m.		20.60 m.			

9-10 EDWARD VII., A. 1910

RIDEAU CANAL.

SUPERINTENDING ENGINEER'S OFFICE,

OTTAWA, April 1, 1909.

SIR,—I have the honour to submit herewith my report on the Rideau canal for the fiscal year ending March 31, 1909.

Navigation opened at Ottawa, May 1, 1908.

Navigation opened at Kingston Mills, May 1, 1908.

Navigation closed at Ottawa, November 30, 1908.

Navigation closed at Kingston Mills, November 19, 1908.

The spring freshet last April was, I regret to say, the source of much damage to our works (the details of which appear under the headings of the various points where it occurred) on account of very high water and very heavy ice; but everything was temporarily repaired as soon as the water subsided, so that navigation was not delayed at all, and permanent repairs to all the damaged structures have been made this winter.

The freshet this year has not yet commenced, and from the small quantity of snow on the ground, I hope that we shall escape a repetition of last year's damages.

However, the ice is very thick (from 24 to 27 inches) and when this is the case, a low freshet is liable to cause it to jam against our dams instead of carrying it over as it does when the water is high; in fact it is absolutely impossible to foretell what may occur when the winter breaks up, as it altogether depends upon the weather at that time.

Last October the water fell so low in Rideau lake that the large vessels had to discontinue running as they could not get over a rock shoal in Poonamalie cut; but this shoal was blasted out during the past winter, so that trouble at that point should not occur again.

The principal works and repairs executed along the line of the canal during the past fiscal year, are as follows:—

OTTAWA LOCK STATION (8 Locks and Basin).

Portions of the masonry of locks 2, 3 and 5 were taken down and rebuilt, and other portions of the old masonry were pointed and grouted. One pair of new lock gates were framed, but they have not yet been completely erected. One pair of new swing beams were framed and placed in position and five new sluice frames were put in. The nine pairs of lock gates at this station were painted last spring, and sundry small repairs were made to the lock house, the wharfs and roads round the basin, and to the station in general.

OTTAWA EAST BRIDGE.

Small repairs were made to the swing span, flooring and east approach. Small additional repairs to the piers will be made during the present month before navigation opens.

BANK STREET BRIDGE.

Small repairs were made to the bridge-keeper's house. At the present time the east rest-pier of the swing span (which was built of timber and which had rotted out from age) is being built of stone—in keeping with the pivot and west rest-piers.

CONCESSION STREET BRIDGE.

Small repairs were made to the embankment on the east side of Dow's lake, in the vicinity of the bridge. Some 3-inch plank was laid on the bridge floor.

SESSIONAL PAPER No. 20

HARTWELL'S LOCK STATION (2 LOCKS).

About 200 yards of dry stone walling were built along the margin of the cut to take the wash from boats passing. Sundry small repairs were made to the station in general.

HOGSBACK LOCK STATION (2 LOCKS).

One pair of swing beams were framed and placed on the centre lock gates. A considerable portion of the dry stone walling along the eastern bank of the cut was rebuilt and some new portions added where the bank was being washed away.

The framing of the timber for the west bulkhead was done, and the structure will be erected next winter. Sundry work such as carting clay, &c., and stopping leakage was done also, as well as small repairs to the station in general.

BLACK RAPIDS LOCK STATION (1 LOCK).

This station, which is I think the most exposed to spring freshets of all the stations on the canal, was most severely damaged by ice last spring.

The whole of the down stream side of the apron of the long dam, 300 feet long and 12 feet high, was wrecked by ice and carried away. However the dam itself stood, and with small repairs was made to serve its purpose for the whole season of navigation; which it did. This winter, according to your orders, an entirely new dam of timber filled with stone was built below the old one; the spillway being curved to take the wave from the overflow, and carry it away from the foot of the dam, and thus prevent the damage which formerly occurred from the eddy at the foot, battering ice and debris against the dam. This curved surface was sheeted with 2-inch elm plank, which of course required to be softened in a steam box before being bent to its proper radii. The whole dam has been widened to give a more unobstructed flow of the water; and a pier built in the centre with an abutment at each end for the purpose of affording the county authorities facilities of erecting a bridge thereon, when they decide upon doing so. The whole structure has been carefully and substantially built, and I am glad to know has met with your approval. The stone wall on the east side of the waste weir has also been rebuilt, and the lay-by piers above the lock and also the ice breakers in the stream were also strengthened and repaired. The lock masonry was pointed up below water, which was rendered possible by the fact that the river remained unusually low all winter; and this also was a most important factor in the scribing and bolting the sills of the new dam to the rock. Sundry small repairs were also made to the lock house, storehouse and station in general.

LONG ISLAND LOCK STATION (3 LOCKS).

A somewhat curious accident occurred at the Manotick bulkhead in May last, when one of the bents suddenly, and without the slightest warning, gave way, thus letting out two bays of stoplogs, and opening a breach 40 feet wide and 12 feet deep for the water to escape. We gained control of the break in two days, without wasting more than 12 inches of water from the canal level above which is 27 miles long; and the coffer dam above was rebuilt and tightened and a new bent framed and the bulkhead restored. The greatest difficulty was in collecting the stoplogs which had been washed for miles down stream; but I think we only actually lost one. The cause of this mishap was from ice, during the freshet, striking the guard posts and breaking the bolts in the sill to which it was fastened; although being tied into place, the bent did not give way until a month after the freshet was over. A new swing bridge was framed and erected across the upper lock. One new pair of lock gates was framed and is now being erected in the lower lock. Sundry small repairs were made to the station in general.

9-10 EDWARD VII., A. 1910

MANOTICK BRIDGE.

No special repairs were required here last year.

WELLINGTON BRIDGE.

No special repairs were required here last year.

BECKETT'S LANDING BRIDGE.

No special repairs were required here last year.

BURRITS RAPIDS LOCK STATION (1 LOCK).

The high water last spring caused some washouts in the embankment along the north side of the cut. The breaks were repaired with stone and the embankment raised for some distance. It was intended to rebuild upper portion of the lock, and the stone was cut and delivered for this purpose before navigation closed; but as I found subsequently that the submerged portion of the south chamber wall of the lock required to be taken down and rebuilt also, I thought it best to postpone the above mentioned repairs, and do all the work at one time next winter, as it involves building coffer dams both above and below the lock and pumping it out—which would require to be done twice if the work was divided. Sundry small repairs were made to the station in general, and also to the swing bridge in the village.

NICHOLSON'S LOCK STATION (2 LOCKS).

One new swing beam was framed and placed on lock gate, and small repairs made to crab platforms and chain blocks. The cellar wall of the rock-house was repaired and sundry small repairs were made to the station in general.

CLOWES LOCK STATION (1 LOCK).

One new swing bar was framed and placed on lock gates. Some stones were carried out of the curve stone dam, by ice during the freshet; and which were recovered and placed again in position. The lower sill of the lock was repaired by our diver, and sundry small repairs were made to the station in general.

MERRICKVILLE LOCK STATION (3 LOCKS AND 2 BASINS).

Two new pairs of lock gates were framed and hung here. The south bulkhead which was damaged by ice last spring was rebuilt. The interior of the old block house has been taken down, as the old concrete floor of the upstairs portion was falling down and becoming dangerous. Nothing has been done with regard to rebuilding the rooms in the upstairs portion of the building, as the lower flat is the only portion now used as a storehouse. Sundry small repairs were made to the station in general.

KILMARNOCK LOCK STATION (1 LOCK).

Two new pairs of lock gates were framed and hung here. Repairs were made to the back dam, the bulkhead and to the station in general.

EDMONDS LOCK STATION (1 Lock).

The timber apron below the waste weir, which was washed out by the spring freshet a year ago, was replaced by concrete laid under water in its stead. One new sluice frame was put in. Small repairs were made to the sluice flanges. Some large boulders in the upper cut were removed by means of dynamite. The stop-log lifter at the waste weir was framed new and a swing beam placed on one of the lower gates of the lock. Sundry small repairs were made to the station in general.

SESSIONAL PAPER No. 20

OLD SLYS LOCK STATION (2 locks).

The pivot pier under the swing bridge was repaired and the approaches thereto were also repaired. The cellar under the lock-house was concreted and repaired, and sundry small repairs made to the lock-house and to the station generally.

SMITH'S FALLS COMBINED LOCK STATION (3 Locks and Basin).

The masonry wall between the pivot-pier and the north wing-wall of the upper lock was taken down and rebuilt. The swing-bridge was replanked with 3-inch plank. One new swing-beam was framed and put on the lower lock gates. The dam in the basin was partially reconstructed, the east stop-log bulkhead being taken down and rebuilt, and another stop-log bulkhead 20 feet wide being added to it—the flat dam being cut away for this purpose. This gives additional discharge for the water during the freshets, so it can now get away through the three bulkheads without rising too high in the basin. The remainder of the flat dam between the double east bulkhead and the west bulkhead was repaired and replanked. The work of filling in the large useless portion of the basin, which is too shallow to float vessels, and which consumes a needless quantity of water every time it is filled, has been continued during the past year, and has proved of benefit. The bottom of the basin which is composed of seamy rock, still leaks considerably, and an attempt was made last winter to staunch one of the worst of these leaks, but owing to the presence of a private wharf at the point of outlet, it was found impossible to do anything of practical value. The work was therefore stopped, and the question of stopping this leakage will be submitted to you in a special report later on. Small repairs were made to the station generally.

SMITH'S FALLS DETACHED LOCK STATION (1 LOCK).

The lower sill of the lock was concreted under water and repaired. The swing bridge across the lower cut was replanked and the turntable repaired, and sundry small repairs were made to the station in general. As many of the numerous boat-houses on our land above the lock were falling into a dilapidated and unsightly condition, I sent an order last winter to the various owners notifying them to remove them. This is now being done, and new permits are being issued for persons to erect boat-houses, subject to our conditions as regards their appearance.

POONAMALIE LOCK STATION (1 LOCK).

The masonry repairs to the lock mentioned in my last report as being under way at March 31, 1903, were completed in April. One pair of new lock gates was framed and hung at the upper end of the lock, and some new stop-logs framed for the bulkhead at the head of the upper cut. A small stone wall was built along the face of portion of the north side of the embankment. The flat rock shoal 90 feet long by 33 feet wide, just above the lock, was blasted out last winter to a depth of about 18 inches; the work being done under agreement with Mr. Mathew Ryan, of Smith's Falls. This has removed an obstruction, which, in seasons of low water has been the subject of much complaint, as it was higher than the rest of the cut. Sundry small repairs were made to the station in general.

BEVERIDGES LOCK STATION (2 Locks).

The new lock gates mentioned in my last report as being under construction were finished last April. Sundry small repairs were made to the station in general.

PERTH BRANCH (Basin and 4 Bridges).

Sundry small repairs were made to the flooring of the bridge, and also to the planking of the basin wharfs. Some $\frac{3}{4}$ -inch water pipe was added to the water service

9-10 EDWARD VII., A. 1910

already installed to enable the bridge-keeper to water the lawn and flower beds round the basin: the Perth Horticultural Society assisting us to fill up the beds with flowers, and the whole appearance of the canal land surrounding the basin, and which is in the heart of the town, has been immensely improved. Repairs were also made to the tow-path road between Perth and Dowsens, and the culverts were also repaired.

BOB'S LAKE DAM.

No repairs were made here, but a large quantity of drift wood which has accumulated above the dam, was removed above high water mark, and some additional stone filling was placed in the piers of the dam.

OLIVER'S FERRY BRIDGE.

The whole bridge was raised off the piers last winter, and the piers were taken down to low water mark and rebuilt and filled with stone. Some plank was laid last year on the bridge floor, but the whole of the flooring and joists will soon require to be rebuilt, possibly next winter, when the bridge can be closed and the travel diverted across the ice.

THE NARROWS LOCK SECTION (1 LOCK).

The upper lay by piers above the lock were wrecked by ice last spring, and have been rebuilt. Sundry repairs were made to the lock-house and the station in general. The By Wash will require to be rebuilt next winter or possibly during the summer, because although it is in no danger of giving way, yet it leaks badly, but it will require coffer dams both above and below, and pumping, before this can be done.

WOLFE LAKE DAM.

Portion of the western cribwork was damaged by ice last spring, and has been repaired and partially rebuilt.

NEWBORO LOCK STATION (1 LOCK).

The sill of the bulkhead at the head of the upper cut, was repaired and concreted under water, and the superstructure straightened out and repaired. The lay-by piers at the foot of the lock were replanked with 2-inch hemlock plank, and sundry small repairs were made to the station in general. Next winter the upper wing walls of the lock on the west side, will require to be taken down and rebuilt as they are commencing to overhang.

CHAFFEYS LOCK STATION (1 LOCK).

The lower sill of the lock was repaired. The foundation for the swing bridge across the lock, which was of timber, was taken out and replaced with concrete. Four new stoplogs were made for the waste weir. Sundry small repairs were made to the lock house and station generally.

DAVIS' LOCK STATION (1 LOCK)

Sundry small repairs were made to the station generally. The lay-by piers above the lock will require to be taken down and rebuilt this year.

JONES' FALLS LOCK STATION (4 LOCKS AND BASIN).

The lower sill of the lower lock was renewed and concreted. The roadway leading from the swing bridge to the long bridge was graded and macadamized. Small repairs were made to the big masonry dam. Our diver was employed in cleaning out some loose stone and boulders from the 'Quarters' channel above the lock station. Sundry small repairs were made to the station generally.

SESSIONAL PAPER No. 20

MORTON DAM.

No repairs were made here last year.

BRASS' POINT BRIDGE.

No repairs were made to the bridge last year.

UPPER BREWERS LOCK STATION (2 LOCKS).

One new pair of lock gates were framed and hung in the upper lock. The lay-by piers at the head of the lock were taken down and rebuilt last winter. Sundry small repairs were made to the station in general.

LOWER BREWERS LOCK STATION (1 LOCK).

Sundry small repairs were made to the lock house, and to the station in general.

KINGSTON MILLS LOCK STATION (4 LOCKS AND 1 BASIN).

Four new swing beams were framed for the lock gates. A new chimney and stairs were built to the lock house, and the long timber bridge was reinforced to last the year—which it has done. I have prepared plans and specifications for a new steel bridge on concrete piers to replace the old wooden one; and the work will be advertised for tender as soon as the funds are available. The ice and high water last spring damaged the embankment considerably, but these have been filled up and repaired, and protection walls built at the base to hold up the slopes. Sundry small repairs were made to the station in general.

GENERAL.

A request was made to the Hon. the Minister last year, by certain farmers residing on the banks of Morton creek and the vicinity thereof, to have the spring freshet discharged less through Morton dam to the St. Lawrence, and more by way of the canal itself towards Kingston, than has up to the present time been customary. This would involve enlarging the waste weirs at Upper Brewers, Lower Brewers, and Kingston Mills lock station as at these places the weirs are taxed during the freshet to their utmost capacity as they stand at present. By your direction, I had a survey made and plans prepared; and the estimated cost of the work I submitted to you in a special report some time ago. All our large supplies were purchased by tender last year, the tenders being awarded by the department.

DREDGING PLANT.

The dredge *Rideau* was employed last season in dredging a shoal of clay, gravel and large boulders, at the foot of Long Island lock station; and she has removed a long existing menace to navigation at this point, as well as straightening out the channel. She also moved to Poonamalie and commenced dredging loose rock and boulders from the cut, and reached a point about half a mile above the lock.

She wintered in one of the locks at Smith's falls; and next season will continue dredging from where she left off last year, out to Saw-log bay.

At the present time she is being fitted out for the season; and the crane is being overhauled and repaired, as well as the swinging cylinders and machinery.

The tug *Loretta* was employed last season attending the dredge, and delivering supplies with scows along the line of the canal, and also on inspection work.

I may state that she delivered nearly all the stone required for the masonry repairs, all the cement, timber, plank, paint, oil, &c., so that the money she saved the department in this respect, may be fairly considered to be a good season's earnings.

A new flat scow 80 feet long by 18 feet wide has been built in the basin at Ottawa

9-10 EDWARD VII., A. 1910

this season; and will be used with the other big flat scow in freighting stone and supplies for the future.

The following is a statement of the highest and lowest water on the lower mitre sills of the lower locks at Ottawa and Kingston Mills lock stations, respectively, from April 1, 1903, to March 31, 1909:—

OTTAWA, LOCK No. 1.				KINGSTON MILLS, LOCK No. 47.			
Highest.		Lowest.		Highest.		Lowest.	
Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Apr. 30	17 9	Apr. 1.....	12 1	Apr. 21-30.....	10 6	Apr. 1-13.....	10 0
May 18.....	25 0	May 1.....	18 10	May 31.....	11 0	May 1	10 7
June 1.....	22 9	June 30.....	15 0	June 1-22.....	11 0	June 30.....	10 10
July 1	14 8	July 31.....	10 0	July 1 8.....	10 10	July 29-31.....	10 6
Aug. 1.....	9 11	Aug. 31.....	6 11	Aug. 1-4.....	10 6	Aug. 29-31.....	10 0
Sept. 1.....	6 11	Sept. 29.....	5 4	Sept. 1.....	10 0	Sept. 29-30.....	8 9
Oct. 1.....	5 6	Oct. 19.....	4 9	Oct. 1-8.....	8 8	Oct. 24-31.....	8 6
Nov. 30.....	5 9	Nov. 1-2-22-23.....	4 11	Nov. 1.....	8 7	Nov. 27-30.....	8 0
Dec. 31.....	7 8	Dec. 2-3.....	6 0	Dec. 1-12.....	8 0	Dec. 22-28.....	7 10
Jan. 27-31.....	8 0	Jan. 20-21.....	7 5	Jan. 20-31.....	8 1	Jan. 1-7.....	7 11
Feb. 27-28.....	8 7	Feb. 6.....	7 6	Feb. 1-3.....	8 1	Feb. 26-28.....	7 5
Mar. 30.....	9 3	Mar. 23-24.....	8 2	Mar. 31.....	8 2	Mar. 1.....	7 4

I have the honour to be, sir,
Your obedient servant,
(Sgd.) A. T. PHILLIPS,
Superintending Engineer.

M. J. BUTLER, Esq.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa.

ONTARIO ST. LAWRENCE CANALS.

SUPERINTENDENT'S OFFICE,
CORNWALL, ONT., March 31, 1909.

SIR,—I have the honour to submit herewith the annual report on the maintenance and operation of the Ontario St. Lawrence canals for the fiscal year ending March 31, 1909.

By order in council of March 17, 1908, the name of this district was changed from 'St. Lawrence' to 'Ontario St. Lawrence.' It comprises the Cornwall, Farran's Point, Rapide Plat, Galops and Murray canals—28 miles of canal within a stretch of river and lake of about 175 miles.

The Cornwall canal was opened for navigation May 1 and closed December 4, and was operated throughout the season with one interruption to traffic.

On the morning of June 23 a washout occurred in the bank above lock No. 18, just at the point where the O. and N.Y. Railway bridge crosses the canal. For a length of about 200 feet the bank was washed away and the bridge pivot pier and swing span collapsed.

Owing to the illness of the chief engineer, Mr. J. L. Weller, of the Welland canal, was appointed acting-chief engineer, and was on the scene of the damage on the morning of the 24th. The work of repair was carried out under his personal direction and supervision. He decided to build a temporary crib-dam around the washed-out

SESSIONAL PAPER No. 20

bank, and to obtain the necessary width of canal prism around the temporary dam by dredging into the north bank. The temporary crib-dam was completed July 4 and water admitted into the reach, and on the morning of July 10, dredging was sufficiently advanced to reopen the canal for traffic, which had been stopped 17 days.

Tenders were called for the work of making permanent repairs, and the contract was awarded to Mr. T. A. Nicholson. Good progress has been made on the work and it will be completed before the opening of navigation for 1909.

The coping course on both sides of lock No. 17 had been shoved out of line. It was taken up and relaid and backed with mass concrete 3 feet deep and 4 feet thick. This lock was equipped with 24 iron snubbing posts set in a base of mass concrete.

Similar work was done on the north side of lock No. 15, and 8 iron snubbing posts placed.

Ten iron snubbing posts were placed along the north side of the basin between these two locks.

About 300 feet of the superstructure of the river wharf at the foot of the canal was rebuilt in concrete. This wharf will be completed the coming season.

A considerable quantity of shrubbery and plants and bulbs was set out at the different locks.

Throughout the season the ordinary work of maintaining the banks, cleaning ditches, repairing gates and valves, was carried on as the condition of things required.

A contract was entered into with the John Inglis Co., Toronto, for the construction of a steel gate lifter for use on the Cornwall canal. The work was completed and the gate lifter delivered during the year.

On the north side of the canal between locks 18 and 19, the bank was built up for a distance of about 500 feet.

The Williamsburg canals were opened May 1 and closed December 5, and were operated throughout the season without interruption.

The northeast entrance pier at Farran's Point was repaired at very considerable cost and is now in good condition.

During the winter a pair of new gates were built for the upper end of lock 24, in the yard at Cornwall. They were stepped during the first week of navigation.

The middle pair of gates at lock 28 were taken out and replaced by the spares. The old ones will be rebuilt this season.

In many places where the riprap had fallen in, it was replaced.

Owing to the unusually high water in the river, all the canal banks required special attention, and a heavy stone toe was placed along the outer bank of the Farran's Point canal for almost its entire length, for half the length of the Rapide Plat, and for about a mile on the Galops. A further supply of stone has been laid in to complete this protection at points still requiring it.

The Murray canal was opened April 20 and closed December 9, and was operated throughout the season without interruption.

On this canal, also, very considerable work on the riprap was made necessary by the high water. This work was done and the banks kept in good repair.

A new flooring was put on the Trenton Road bridge.

The material in the house that formerly was used as a collector's office was used in building a dwelling house for one of the men on the Smithfield bridge.

The work of rebuilding the superstructures of the entrance piers in concrete under contract to Mr. R. Weddell was completed.

Appended are statements of water levels and of fines and damages.

I have the honour to be, sir,

Your obedient servant,

M. J. BUTLER, Esq., C.E.,

Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa, Ont.

W. A. STEWART,
Superintendent.

RECORD of Highest and Lowest Levels of Water on the Ontario-St. Lawrence Canals for Year ending March 31, 1908.

Month	CORNWALL.				FARRAN'S POINT.		RAPIDE PLAT.		GALOIS.				LIFT LOCK.		MURRAY CANAL.						
	Lock 15.		Lock 21.		Lock 22 Lower.	Lock 22 Upper.	Lock 23.	Lock 24.	Lock 25.	Lock 27.	Lock 28.	Low.	High.								
	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.											
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.			Ft.		Ft.					
1908.	22.8	16.8	18.1	17.0	20.0	19.2	20.9	19.8	20.0	18.9	19.8	18.3	23.3	20.1	18.3	16.7	19.8	17.8	15.6	14.11	
	17.8	16.9	18.6	17.4	20.6	19.7	21.4	20.4	20.5	19.6	20.3	19.0	23.8	22.5	19.0	17.8	20.5	19.2	16.0	14.9	
	17.5	17.1	18.5	18.0	20.4	19.1	21.9	20.6	20.5	20.0	20.2	19.4	23.8	23.0	18.8	18.1	20.4	19.6	16.0	15.6	
	17.3	17.0	18.4	17.8	20.4	19.4	21.4	20.4	20.7	19.8	20.1	19.2	23.8	22.7	18.6	18.1	20.2	19.5	15.9	15.4	
	17.0	16.6	18.0	17.0	19.8	18.2	20.8	19.8	20.0	19.0	19.0	18.0	23.1	21.8	18.4	17.3	19.8	18.4	15.4	14.9	
	16.6	16.1	17.6	16.5	19.5	18.1	20.5	19.2	19.2	18.2	19.0	17.7	22.3	21.0	17.7	16.6	18.9	17.3	14.8	13.11	
	16.2	15.5	17.0	15.8	18.5	16.9	19.5	17.8	18.7	17.1	18.2	16.3	21.5	19.6	17.2	15.4	18.3	16.3	14.0	13.1	
	15.6	15.2	16.8	15.4	18.0	16.8	18.9	17.9	18.0	16.8	17.3	16.1	20.6	19.2	16.7	15.5	17.3	16.0	13.1	12.8	
	15.2	14.9	16.5	15.0	18.0	16.5	18.8	17.3	17.5	15.6	17.2	14.7	20.7	17.8	16.9	14.6	17.7	14.8	12.11	12.4	
	1909.																				
		22.8	14.5	15.8	14.6	18.3	16.0	19.0	16.8	17.8	15.4	16.5	14.4	19.5	16.6	15.8	14.6	16.2	14.0	12.7	12.3
		25.7	20.8	16.8	15.0	18.8	16.2	19.6	16.9	17.4	15.0	15.8	14.1	18.8	16.4	15.6	14.0	15.4	13.5	12.11	12.3
24.0		17.4	15.7	15.2	18.2	16.9	18.9	17.6	17.5	16.5	16.8	15.4	19.9	18.4	16.1	15.0	16.8	15.3	13.0	12.7	

SESSIONAL PAPER No. 20

STATEMENT of Fines and Damages, in Connection with Ontario St. Lawrence Canals during Season of 1908.

CORNWALL CANAL.

Lock.	Date, 1908.	Name of Vessel.	Damage. \$ cts.	Fine. \$ cts.	Name of Owner.	Remarks.
Lock 20.	June 16.....	'J. S. Keefe'			G. L. & St. L. Trans. Co.....	Paid.
" 15.	" 19.....	"	25 00	25 00	"	Paid.
" 18.	" 19.....	'Wasaga'	10 00	10 00	Collingwood Shipping Co.....	Paid.
" 18.	" 19.....	"	75 00	75 00	"	Paid.
" 15.	" 20.....	'A. D. Davidson'	100 00	100 00	G. L. & St. L. Trans. Co.....	Paid.
" 18.	Sept. 24.....	'Black Rock'	131 50	131 50	W. Anderson.....	Paid Cornwall \$50 00.
" 18.	Nov. 3.....	'Ashland'	114 53	114 53	E. Hains Lumber Co.....	Paid Cardinal \$81.50.
" 20.	Oct. 16.....	'Russel Brown'	3 00	3 00	"	Paid.
" 20.	" 16.....	'George Heath'	3 00	3 00	"	Paid.

WILLIAMSBURG CANALS.

Lock 23.	Aug. 4.....	'S. N. Parent'	125 00	125 00	G. L. & St. L. Trans. Co.....	Paid.
.....	Nov. 30.....	'Bartlett'	10 00	10 00	Montreal Trans. Co.....	Paid.

9-10 EDWARD VII., A. 1910

CANALS REVENUE BRANCH, ST. PETERS, C.B.
CANAL OFFICE, March 31, 1909.

SIR,—I have the honour to submit my annual report on work and operation on St. Peters Canal, under my charge, during the fiscal year ending March 31, 1909.

There have not been any repairs done to canal the past year, outside of minor repairs, such as were required for the operation of lock, such as placing five new chains.

The canal and lock are in a very bad condition, as was pointed to your engineers last summer, and so far as the operating of the gates is concerned, it is just a question as to how long we will be able to operate them, and at times, only for the assistance we get from captains and their crews, the staff could not move them.

Navigation opened on the first day of May, 1908, and closed on January 2, 1909; during that time, 1,376 steamers and vessels passed through canal.

There is one tidal lock and four pairs of gates on St. Peters canal.

Meantime I have the honour to be,
Your obedient servant,

(Sgd.) JOHN H. DEVEREAUX,
Lockmaster.

M. J. BUTLER, Esq., C.E.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa.

PART VII—MISCELLANEOUS

Tables of distances, Intercolonial and Prince Edward Island Railways.

INTERCOLONIAL RAILWAY.

Expenses, earnings, freight tonnage and passengers, yearly since July 1, 1876.
 Earnings, yearly since July 1, 1876.
 Local and through freight, yearly since July 1, 1876.
 Local and through passengers, yearly since July 1, 1876.
 Coal carried from Nova Scotia collieries, yearly since July 1, 1876.
 Grain carried for shipment, yearly since July 1, 1876.
 Flour and meal carried, yearly since July 1, 1876.
 Grain carried, yearly since July 1, 1876.
 Lumber carried, yearly since July 1, 1876.
 Live stock carried, yearly since July 1, 1876.
 Ocean-borne goods carried, yearly since July 1, 1876.
 Raw and refined sugar carried, yearly since July 1, 1876.
 Fresh and salt fish carried, yearly since July 1, 1876.
 Ocean-borne passenger business at Halifax for fiscal year 1908-9.
 Ocean-borne passenger business at St. John for the fiscal year 1908-9.
 Ocean-borne passenger business at Quebec for fiscal year 1908-9.
 Ocean-borne freight traffic via Halifax for fiscal year 1908-9.
 Ocean-borne freight traffic via St. John for fiscal year 1908-9.

WINDSOR BRANCH.

Earnings, expenses and profits or losses, yearly from 1880.

PRINCE EDWARD ISLAND RAILWAY.

Expenses, earnings, freight and passenger traffic, yearly from 1875.

CANALS.

Statement showing total cost of construction and enlargement from Montreal to Port Arthur.
 Statement showing total cost of construction and enlargement from Lachine to Ottawa.
 Statement showing total cost of construction and enlargement from Ottawa to Kingston.
 Statement showing total cost of construction and enlargement from St. Johns to Sorel.
 Statement showing total cost of construction and enlargement from Lake Ontario to Georgian Bay.
 Statement showing total cost of construction and enlargement from Atlantic Ocean to Bras d'Or Lakes.
 Dates of opening and closing of canals for the season of 1908.
 Freight traffic in 1907 and 1908.
 Diagrams showing dimensions of smallest lock on each canal, &c.
 Dimensions and other features of the several canal works, and descriptions of the intermediate water navigations:
 1. Between Montreal and Port Arthur or Fort William, Lake Superior.
 2. Montreal, Ottawa and Kingston.
 3. River Richelieu and Chambly Canal to Lake Champlain.
 4. Trent Canal.
 5. St. Peters Canal.

INTERCOLONIAL RAILWAY.

The Intercolonial Railway touches six Atlantic ocean ports, namely, Point du Chêne, Pictou, Halifax, St. John, Sydney and North Sydney, as well as the River St. Lawrence ports of Lévis, opposite Quebec, and Montreal.

The total length of the road operated during the year ended March 31, 1909, was 1447.13 miles.

The following are the through distances:—

	Miles.
Montreal to Halifax, via Lévis.	837
“ “ St. John, via Lévis.	740
“ “ Sydney, via Lévis.	990
“ “ North Sydney, via Lévis.	983

Freight is carried direct via St. Henri, which would reduce each of the above distances by 3 miles.

MAIN LINE AND BRANCHES.

(As remeasured in 1908.)

	Miles.
Halifax to Truro.	61.87
Dartmouth Branch.	12.00
Truro to Moncton.	123.77
Moncton to St. John.	89.31
Pointe du Chêne Branch.	11.98
Moncton to Campbellton.	185.37
Campbellton to Ste. Flavie.	105.03
Indiantown Branch.	13.45
Ste. Flavie to Rivière du Loup.	83.29
Rivière Ouelle Branch.	6.19
Rivière du Loup to Pointe Lévis.	115.55
Hadlow to Chaudière Curve.	5.63
Chaudière to Ste. Rosalie.	115.53
St. Charles Junction to Chaudière Junction.	16.73
Nicolet Branch.	14.70
Dalhousie Branch.	6.28
Pictou to Oxford Junction.	69.39
Brown's Point to Stellarton.	11.90
Junction near New Glasgow to Pictou Landing.	8.18
Pugwash Junction to Pugwash.	4.54
Truro to Mulgrave.	122.30
Mulgrave to Point Tupper (Ferry).	0.80
Point Tupper to Sydney.	91.17
North Sydney Junction to Sydney Mines.	7.07
Fredericton to Loggieville.	124.80

1,406.83

LEASED.

Length of main line from Pointe Lévis to Hadlow	1.48	
Chaudière Curve to Chaudière.	1.19	
Ste. Rosalie Junction to Montreal.	37.63	40.30

Total miles. 1,447.13

9-10 EDWARD VII., A. 1910

FREIGHT BRANCHES OWNED.

	Miles.
Switch near North street to D.W.T., Halifax....	0.85
Halifax Cotton Factory.. . . .	2.10
Dartmouth Station to end of line.. . . .	2.12
Sydney Station to wharf.. . . .	1.06
North Sydney Station to wharf.. . . .	0.82
Switch near Pictou landing to coal wharf.. . . .	0.75
Pictou Station to wharf.. . . .	0.15
Pictou Station to Copper Crown Smelter.. . . .	0.72
Logan's Tannery siding.. . . .	0.48
Pugwash Station to wharf.. . . .	0.07
Sackville Wharf Branch.. . . .	0.47
Dorchester Wharf Branch.. . . .	1.00
Moncton Wharf Branch.. . . .	1.00
Courtney Bay Branch.. . . .	2.39
St. John water front extension.. . . .	0.44
St. John Station to Deep Water Wharf.. . . .	0.28
New Castle Wharf Branch.. . . .	1.75
Dalhousie Station to wharf.. . . .	0.50
Campbellton Wharf Branch.. . . .	0.43
Rimouski Wharf Branch.. . . .	2.00
Trois Pistoles Spur.. . . .	2.38
Rivière du Loup Wharf Branch.. . . .	4.35
St. Pacôme Spur.. . . .	1.27
Nicolet Station to wharf.. . . .	2.08
Carmel Branch, main line to village.. . . .	1.05
Blackville to Indiantown.. . . .	8.50
Fort Lawrence Spur.. . . .	1.18
Wallace Spur.. . . .	2.00
Petit Rocher Spur to wharf.. . . .	1.35
	43.54

WINDSOR BRANCH.

This road extends from Windsor Junction, on the Intercolonial Railway, to Windsor, N.S., a distance of 32 miles.

PRINCE EDWARD ISLAND RAILWAY.

LENGTH OF LINE.	Miles.
Souris to Tignish.. . . .	166
Mount Stewart to Georgetown.. . . .	24
Charlottetown to Royalty Junction.. . . .	5
Emerald Junction to Cape Traverse.. . . .	13
Alberton to Cascumpee wharf.. . . .	1
Charlottetown to Murray Harbour.. . . .	52.3
Montague Junction to Montague.. . . .	6.2
	267.5

SESSIONAL PAPER No. 20

INTERCOLONIAL RAILWAY.

The following table shows the working expenses, gross earnings, the tonnage of freight and number of passengers carried each year since July 1, 1876.

Year.	Average Miles in Operation.	Working Expenses.	Gross Earnings.	Profit.	Loss.	Tons of Freight carried.	No. of Passengers carried.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.		
1876-77 ...	714	1,661,673 55	1,154,145 33	.....	507,228 22	421,327	613,420
1877-78....	714	1,816,273 56	1,378,946 78	.....	432,326 78	522,710	618,957
1878-79....	714	2,010,183 22	1,294,009 69	.....	716,083 53	510,861	640,101
1879-80....	829	1,603,429 71	1,506,298 48	.....	97,131 23	561,924	581,483
1880-81....	840	1,759,851 27	1,760,393 92	542 65	.....	725,777	631,245
1881-82....	840	2,069,657 45	2,079,262 66	9,605 18	.....	838,956	779,994
1882-83....	840	2,360,373 27	2,370,910 10	17,547 18	.....	970,961	878,600
1883-84....	887	2,377,433 62	2,384,414 92	6,981 30	.....	1,009,237	944,636
1884-85....	941	2,519,751 56	2,441,203 66	.....	78,547 90	989,986	957,228
1885-86....	946	2,583,999 67	2,450,093 88	.....	133,905 79	1,023,788	932,880
1886-87....	977	2,922,369 62	2,660,116 93	.....	262,252 69	1,143,020	942,784
1887-88....	971	3,366,781 74	2,983,336 95	.....	383,445 69	1,288,823	1,040,163
1888-89....	971	3,244,647 73	2,967,801 00	.....	276,847 73	1,218,877	1,136,272
1889-90....	971	3,560,575 74	3,012,739 87	.....	847,835 87	1,368,819	1,219,233
1890-91....	1,094	3,662,341 94	2,977,395 38	.....	684,946 56	1,304,534	1,298,304
1891-92....	1,142	3,439,377 00	2,945,441 97	.....	493,935 03	1,264,575	1,297,732
1892-93....	1,142	3,045,317 50	3,065,499 09	20,181 59	.....	1,388,080	1,292,878
1893-94....	1,142	2,981,671 98	2,987,510 27	5,838 29	.....	1,312,710	1,301,062
1894-95....	1,142	2,936,902 74	2,940,717 95	3,815 21	.....	1,276,816	1,352,667
1895-96....	1,142	3,012,827 62	2,957,670 10	.....	55,187 52	1,379,618	1,471,866
1896-97....	1,145	2,925,968 67	2,866,028 02	.....	59,940 65	1,296,028	1,501,690
1897-98....	1,201	3,327,648 51	3,117,669 85	.....	209,978 66	1,434,576	1,523,444
1898-99....	1,301	3,675,686 21	3,738,331 44	62,645 43	.....	1,750,761	1,603,095
1899-1900...	1,301	4,431,404 69	4,552,071 71	120,667 02	.....	2,151,208	1,029,754
1900-01....	1,301	5,460,422 64	4,972,235 87	.....	488,186 77	2,111,310	2,517,295
1901-02....	1,301	5,574,563 30	5,671,385 91	96,822 61	.....	2,385,816	2,186,226
1902-03....	1,315	6,196,653 19	6,324,323 72	127,670 53	.....	2,790,737	2,404,230
1903-04....	1,321	7,239,982 04	6,339,231 43	.....	900,750 61	2,664,149	2,663,156
1904-05....	1,446	8,508,826 75	6,783,522 83	.....	1,725,303 92	2,782,257	2,810,960
1905-06....	1,446	7,581,914 36	7,643,829 90	61,915 54	.....	3,156,189	2,737,160
1906-07†....	1,448	6,030,171 83	6,248,311 00	218,139 17	.....	2,606,073	2,044,847
1907-08....	1,448	9,157,435 53	9,173,558 80	16,123 27	.....	4,134,064	2,789,371
1908-09....	*1,447-13	9,328,021 55	8,527,069 46	.....	800,952 09	3,573,972	2,907,237

† The year 1906-07 was nine months only ; the Canadian fiscal year having been changed to close on March 31, instead of June 30.

* The railway was remeasured in this year.

9-10 EDWARD VII., A. 1910

INTERCOLONIAL RAILWAY.

STATEMENT of Earnings, yearly, from July 1, 1876, to March 31, 1909.

Year.	Miles in operation.	Passenger Traffic.	Freight Traffic.	Mails and Sundries.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
1876-77.....	714	460,368 15	607,564 99	86,512 21	1,154,443 33
1877-78.....	714	475,256 82	801,709 82	101,985 07	1,378,946 78
1878-79.....	814	451,893 29	752,490 85	88,715 55	1,294,009 69
1879-80.....	829	490,338 66	915,486 50	100,473 32	1,506,298 48
1880-81.....	840	545,114 48	1,113,872 21	101,407 23	1,760,493 92
1881-82.....	850	651,296 94	1,303,496 00	124,470 72	2,079,262 66
1882-83.....	940	741,992 72	1,487,601 98	141,326 40	2,379,910 10
1883-84.....	887	775,783 77	1,461,390 37	147,240 78	2,383,414 92
1884-85.....	941	747,285 13	1,542,052 10	151,566 35	2,441,203 66
1885-86.....	946	765,900 03	1,523,487 72	160,706 13	2,450,093 88
1886-87.....	977	828,328 28	1,677,971 59	153,817 06	2,660,116 93
1887-88.....	971	884,448 07	1,932,877 85	166,010 13	2,983,336 95
1888-89.....	971	906,246 47	1,909,094 44	152,460 09	2,967,801 00
1889-90.....	971	895,094 53	1,964,646 86	152,998 48	3,012,739 87
1890-91.....	1,094	962,316 88	1,854,629 88	160,448 62	2,977,395 38
1891-92.....	1,142	961,427 94	1,803,529 03	180,485 00	2,945,441 97
1892-93.....	1,132	1,002,912 74	1,868,853 84	184,468 80	3,065,499 09
1893-94.....	1,142	958,915 13	1,834,126 34	193,762 51	2,987,502 27
1894-95.....	1,142	963,914 44	1,782,608 54	194,194 97	2,940,717 95
1895-96.....	1,142	971,426 26	1,788,813 18	197,400 66	2,957,640 10
1896-97.....	1,145	979,005 57	1,687,050 42	199,472 03	2,866,028 02
1897-98.....	1,201	1,053,864 64	1,857,740 06	206,065 15	3,117,669 85
1898-99.....	1,315	1,167,453 16	2,348,096 58	222,781 70	3,738,331 44
1899-1900.....	1,315	1,404,469 87	2,912,790 52	234,811 32	4,552,071 91
1900-01.....	1,315	1,607,166 79	3,121,006 15	244,062 93	4,972,235 87
1901-02.....	1,315	1,770,941 13	3,644,513 42	255,931 36	5,761,385 91
1902-03.....	1,315	1,927,916 87	4,128,255 00	268,151 75	6,324,323 72
1903-04.....	1,321	2,021,568 40	4,041,122 48	276,540 55	6,339,231 43
1904-05.....	1,446	2,105,066 75	4,373,178 75	305,277 53	6,783,522 83
1905-06.....	1,446	2,297,716 52	5,019,805 53	326,307 85	7,643,829 90
1906-07.....	1,448	1,952,438 88	4,032,745 00	263,127 12	6,248,311 00
1907-08.....	1,448	2,711,416 98	6,054,493 45	407,643 37	9,173,558 80
1908-09.....	*1,447 13	2,628,218 57	5,502,550 58	396,300 31	8,527,069 46

* As remeasured in this year..

† 1906-07, nine months only.

SESSIONAL PAPER No. 20

INTERCOLONIAL RAILWAY.

STATEMENT showing the Number of Tons of Local and Through Freight carried, yearly, from July 1, 1876, to March 31, 1909.

Year.	Miles in Operation.	Local Freight.	Through Freight.	Total.
		Tons.	Tons.	Tons.
1876-7.....	714	The information for these years was destroyed when the general offices in Moncton were burned.		421,327
1877-8.....	714			522,710
1878-9.....	714			510,861
1879-80.....	829			561,924
1880-1.....	840			725,777
1881-2.....	840	571,784	267,272	838,956
1882-3.....	840	537,025	443,936	970,961
1883-4.....	887	584,581	424,656	1,009,237
1884-5.....	941	506,574	483,352	989,936
1885-6.....	946	580,976	413,712	1,023,788
1886-7.....	977	633,455	509,565	1,143,020
1887-8.....	971	727,599	561,224	1,288,823
1888-9.....	971	624,436	594,441	1,218,877
1889-90.....	971	756,696	612,123	1,368,819
1890-1.....	1,094	797,492	507,042	1,304,534
1891-2.....	1,142	750,783	513,792	1,264,575
1892-3.....	1,142	1,030,628	357,452	1,388,080
1893-4.....	1,142	966,114	376,596	1,342,710
1894-5.....	1,142	901,374	566,442	1,267,816
1895-6.....	1,142	1,101,229	368,389	1,379,618
1896-7.....	1,145	927,167	368,859	1,296,028
1897-8.....	1,201	1,053,569	381,007	1,434,576
1898-9.....	1,315	1,351,569	399,192	1,750,761
1899-1900.....	1,315	1,713,928	437,280	2,151,208
1900-1.....	1,315	1,633,671	477,639	2,111,310
1901-2.....	1,315	1,914,551	471,265	2,385,816
1902-3.....	1,315	2,239,993	550,744	2,790,737
1903-4.....	1,321	2,123,261	540,888	2,664,149
1904-5.....	1,446	2,119,528	662,729	2,782,257
1905-6.....	1,446	2,413,863	742,326	3,156,189
1906-7.....	1,448	1,996,869	609,204	*2,606,073
1907-8.....	1,448	3,227,435	906,629	4,134,064
1908-9.....	†1,447-13	2,742,454	831,518	3,573,972

*1906-07 nine months only.

†As remeasured in this year.

9-10 EDWARD VII., A. 1910

INTERCOLONIAL RAILWAY.

STATEMENT of the Number of Local and Through Passengers carried, yearly, from July 1, 1876, to March 31, 1909.

Year.	Miles in Operation.	Number of Local Passengers.	Number of Through Passengers.	Total.
1876-7.....	714	The information for these years was destroyed when the general offices in Moncton were burned.		613,420
1877-8.....	714			619,957
1878-9.....	714			640,101
1879-80.....	820			581,483
1880-1.....	840			631,245
1881-2.....	840	647,534	132,460	779,994
1882-3.....	840	728,186	150,414	878,600
1883-4.....	887	784,715	159,921	944,636
1884-5.....	941	812,028	145,200	957,228
1885-6.....	946	784,817	148,063	932,880
1886-7.....	977	814,032	128,752	942,784
1887-8.....	971	948,324	91,839	1,040,163
1888-9.....	971	1,050,592	85,680	1,136,272
1889-90.....	971	1,112,695	91,531	1,219,233
1890-1.....	1,094	1,203,814	94,490	1,298,304
1891-2.....	1,142	1,198,649	99,083	1,297,732
1892-3.....	1,142	1,188,827	104,051	1,292,878
1893-4.....	1,142	1,216,027	85,635	1,301,662
1894-5.....	1,142	1,272,284	80,383	1,352,667
1895-6.....	1,142	1,386,803	85,063	1,471,866
1896-7.....	1,145	1,416,631	85,059	1,501,690
1897-8.....	1,201	1,438,590	89,854	1,523,444
1898-9.....	1,315	1,504,652	98,443	1,603,095
1899-1900.....	1,315	1,878,858	112,896	1,791,754
1900-1.....	1,315	1,905,599	119,696	2,025,295
1901-2.....	1,315	2,061,196	125,030	2,186,226
1902-3.....	1,315	2,255,013	149,217	2,404,230
1903-4.....	1,321	2,447,843	215,313	2,663,156
1904-5.....	1,446	2,589,928	221,032	2,810,960
1905-6.....	1,446	2,491,472	245,688	2,737,160
*1906-7.....	1,448	1,853,126	191,721	2,044,847
1907-8.....	1,448	2,593,886	195,485	2,789,371
1908-9.....	†1,447.13	2,656,217	251,020	2,907,237

*1906-07 nine months only.

†As remeasured in this year.

SESSIONAL PAPER No. 20

The following table shows the number of tons of coal carried over the Interecolonial Railway from the Nova Scotia collieries to Ste. Rosalie, Montreal and St. John for points west thereof, and to local stations in each year since July 1, 1876.

Year.	For the West.			To Local Stations.	Total.
	Via Ste. Rosalie.	Via Montreal.	Via St. John.		
1876-7				103,420	103,420
1877-8				97,043	97,043
1878-9		300		112,232	112,532
1879-80		1,097		135,369	136,466
1880-1		6,102	4,022	174,483	184,607
1881-2		18,015	11,779	218,364	248,158
1882-3		12,837	22,206	227,380	262,423
1883-4		32,014	19,532	252,014	293,562
1884-5		133,440	1,773	213,791	349,004
1885-6		171,170	21,150	215,272	407,592
1886-7		192,871	27,536	233,178	453,585
1887-8		183,704	36,228	309,727	529,659
1888-9		160,026	27,923	338,538	526,487
1889-90		164,453	25,126	366,967	554,546
1890-1		113,996	69,213	344,829	498,038
1891-2		35,447	5,918	392,441	433,806
1892-3		136,868	3,775	402,653	543,296
1893-4		102,273	8,028	367,390	478,691
1894-5		67,082	7,865	310,253	385,200
1895-6		53,124	9,681	369,708	432,513
1896-7		38,395	12,305	331,469	382,172
1897-8		9,084	9,796	351,069	369,949
1898-9		4,644	5,399	484,163	494,206
1899-1900		3,495		599,714	603,289
1900-1	136			506,454	506,590
1901-2	1,131	5,763	3,640	546,986	557,520
1902-3	2,200	7,817	6,775	725,727	742,519
1903-4	2,260	637	513	691,346	694,761
1904-5	800	265	5,022	596,296	602,377
1905-6	7,542	1,625	661	610,444	620,272
*1906-7	1,737	2,808	3,252	621,833	632,630
1907-8	22	183	4,245	1,061,694	1,066,134
1908-9	514	945	4,243	909,050	914,752

* 1906-07 nine months only.

9-10 EDWARD VII., A. 1910

TABLE showing the number of Bushels of Grain carried during each year over the Intercolonial Railway for shipment since July 1, 1876.

Year.	Bushels.		Total.	Year.	Bushels.		Total.
	Via Chaudière.	Via St. John.			Via Chaudière.	Via St. John.	
1876-77.....				1892-93.....	156,306	197,666	352,975
1877-78.....				1893-94.....	Nil.	8,026	8,026
1878-79.....				1894-95.....	"	Nil.	Nil.
1879-80.....				1895-96.....	"	"	"
1880-81.....				1896-97.....	"	"	"
1881-82.....				1897-98.....	8,000	"	8,000
1882-83.....	31,011		31,011	1898-99.....	30,000	"	30,000
1883-84.....	73,389		73,389	1899-1900.....	13,239	"	13,239
1884-85.....	300,901		300,901	1900-01.....	147	"	147
1885-86.....	389,122		389,122	1901-02.....	Nil.	"	Nil.
1886-87.....	575,880		575,880	1902-03.....	"	"	"
1887-88.....	69,021		69,021	1903-04.....	147,438	"	147,438
1888-89.....	129,725		129,725	1904-05.....	"	"	Nil.
1889-90.....	502,012		502,012	1905-06.....	*170,000		170,000
1890-91.....	148,803	59,543	218,337	1906-07.....			Nil.
1891-92.....	845,997	519,500	1,265,497	1907-08.....			"
				1908-09.....			"

* Via Montreal. 1906-07 nine months only.

TABLE showing the number of Barrels of Flour and Meal carried during each year over the Intercolonial Railway since July 1, 1876.

Year.	Barrels.	Year.	Barrels.
1876-77.....	254,710	1892-93.....	856,913
1877-78.....	557,778	1893-94.....	944,967
1878-79.....	630,329	1894-95.....	938,351
1879-80.....	535,248	1895-96.....	822,097
1880-81.....	672,310	1896-97.....	847,701
1881-82.....	692,095	1897-98.....	987,408
1882-83.....	983,916	1898-99.....	1,157,250
1883-84.....	817,134	1899-1900.....	1,234,077
1884-85.....	935,977	1900-01.....	1,292,106
1885-86.....	761,127	1901-02.....	1,311,707
1886-87.....	763,894	1902-03.....	1,521,540
1887-88.....	871,838	1903-04.....	1,607,050
1888-89.....	948,514	1904-05.....	1,769,480
1889-90.....	1,116,050	1905-06.....	1,882,630
1890-91.....	1,013,129	1906-07.....	1,531,140
1891-92.....	954,015	1907-08.....	1,528,620
		1908-09.....	1,466,920

1906-07 nine months only.

SESSIONAL PAPER No. 20

TABLE showing the number of bushels of grain carried during each year over the Inter-colonial Railway since July 1, 1876.

Year.	Bushels.	Year.	Bushels.
1876-77.....	292,852	1893-94.....	1,304,684
1877-78.....	331,170	1894-95.....	1,036,384
1878-79.....	302,921	1895-96.....	1,064,385
1879-80.....	534,021	1896-97.....	1,093,499
1880-81.....	565,678	1897-98.....	1,551,372
1881-82.....	560,253	1898-99.....	2,595,353
1882-83.....	1,195,601	1899-1900.....	2,720,453
1883-84.....	654,673	1900-1901.....	3,535,364
1884-85.....	734,902	1901-02.....	2,959,761
1885-86.....	849,806	1902-03.....	3,392,252
1886-87.....	1,018,395	1903-04.....	2,788,772
1887-88.....	1,219,035	1904-05.....	3,317,910
1888-89.....	1,256,158	1905-06.....	2,924,226
1889-90.....	2,610,202	1906-07.....	2,231,864
1890-91.....	2,800,921	1907-08.....	4,567,245
1891-92.....	3,776,677	1908-09.....	4,727,268
1892-93.....	1,514,619		

1906-07 nine months only.

TABLE showing the quantity of lumber in feet carried during each year over the Inter-colonial Railway since July 1, 1876.

Year.	Feet.	Year.	Feet.
1876-77.....	50,096,474	1893-94.....	200,507,949
1877-78.....	56,626,547	1894-95.....	202,247,269
1878-79.....	55,626,696	1895-96.....	226,332,715
1879-80.....	55,462,654	1896-97.....	243,355,725
1880-81.....	72,841,388	1897-98.....	354,093,816
1881-82.....	78,356,418	1898-99.....	306,554,031
1882-83.....	104,633,417	1899-1900.....	379,350,974
1883-84.....	131,120,948	1900-1901.....	396,858,964
1884-85.....	138,493,675	1901-02.....	428,051,029
1885-86.....	117,186,512	1902-03.....	459,231,589
1886-87.....	161,801,763	1903-04.....	465,379,803
1887-88.....	197,755,272	1904-05.....	518,434,310
1888-89.....	199,507,777	1905-06.....	572,878,600
1889-90.....	210,886,071	1906-07.....	452,602,703
1890-91.....	184,188,324	1907-08.....	754,759,383
1891-92.....	175,474,340	1908-09.....	571,395,101
1892-93.....	181,211,013		

1906-07 nine months only.

9-10 EDWARD VII., A. 1910

TABLE showing the number of live stock carried during each year over the Intercolonial Railway since July 1, 1876.

Year.	Number.	Year.	Number.
1876-77.....	34,414	1893-94.....	79,203
1877-78.....	46,498	1894-95.....	72,106
1878-79.....	47,584	1895-96.....	64,051
1879-80.....	70,990	1896-97.....	72,082
1880-81.....	61,574	1897-98.....	89,301
1881-82.....	73,479	1898-99.....	109,821
1882-83.....	68,338	1899-1900.....	92,813
1883-84.....	60,090	1900-01.....	95,923
1884-85.....	70,785	1901-02.....	98,495
1885-86.....	74,498	1902-03.....	127,060
1886-87.....	82,896	1903-04.....	115,006
1887-88.....	98,302	1904-05.....	110,670
1888-89.....	85,960	1905-06.....	106,589
1889-90.....	80,771	1906-07.....	97,381
1890-91.....	95,529	1907-08.....	99,824
1891-92.....	87,889	1908-09.....	104,165
1892-93.....	93,369		

1906-07 nine months.

TABLE showing the number of tons of ocean-borne goods to and from Europe carried over the Intercolonial Railway during each year since July 1, 1876.

Year.	Via Ste. Rosalie and from the West.	Via Mont- real to and from the West.	Via St. John to and from the West.	To and from Local Stations.	Total.
1876-77.....					
1877-78.....		14,949		3,405	18,354
1878-79.....		21,628		2,643	24,271
1879-80.....		21,073		4,952	26,025
1880-81.....		15,454		3,334	18,788
1881-82.....		21,607		4,168	25,775
1882-83.....		24,875		7,911	32,786
1883-84.....		19,696		6,533	26,229
1884-85.....		22,787		8,405	31,192
1885-86.....		13,464		8,216	21,680
1886-87.....		16,923		9,811	26,734
1887-88.....		41,864		8,878	50,742
1888-89.....		17,340		11,481	28,821
1889-90.....		9,895		11,730	21,625
1890-91.....		9,923		10,764	20,687
1891-92.....		9,719		23,835	33,571
1892-93.....		7,295		12,319	19,714
1893-94.....		3,023	204	13,455	16,682
1894-95.....		6,749	213	10,399	17,361
1895-96.....		3,767	314	16,748	20,829
1896-97.....		2,654	263	17,239	20,156
1897-98.....		5,950	1,637	18,633	26,220
1898-99.....		2,462	243	31,555	34,263
1899-1900.....		6,880	307	37,108	39,794
1900-01.....	322	7,780	1,142	155,514	163,838
1901-02.....	1,106	11,925	1,528	172,733	183,147
1902-03.....	817	21,377	1,194	124,695	138,631
1903-04.....	2,079	15,325	2,994	146,070	174,520
1904-05.....	284	17,217	3,687	85,853	105,149
1905-06.....	2,026	15,922	5,337	128,462	153,042
1906-07.....	1,384	16,652	436	110,447	128,219
1907-08.....	2,410	16,552	519	134,541	154,052
1908-09.....	2,487	23,402	649	119,913	146,451

1906-07 nine months only.

SESSIONAL PAPER No. 20

TABLE showing the number of tons of raw and refined sugar carried over the Inter-colonial Railway during each year since July 1, 1876.

Year.	RAW SUGAR.					REFINED SUGAR.				
	Via Ste. Rosalie.	To Montreal for the West.	To St. John for the West.	To Local Stations	Total.	To Ste. Rosalie for the West.	To Montreal for the West.	To St. John for the West.	To Local Stations	Total
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1876-77.....		340			340					
1877-78.....		186			186					
1878-79.....		1,041			1,041					
1879-80.....		12,220			12,220					
1880-81.....		13,872			13,872					
1881-82.....		14,256		1,290	15,546		4,022		2,902	6,924
1882-83.....		9,465		508	9,973		7,146		3,607	10,753
1883-84.....		13,778		3,068	16,846		11,126		5,497	16,623
1884-85.....		10,381		3,661	14,042		14,543		7,265	21,808
1885-86.....		4,394		3,998	8,392		18,024		8,445	26,469
1886-87.....		20,450		8,500	28,950		7,674		5,858	13,518
1887-88.....		14,320		14,085	28,405		15,041		8,395	23,439
1888-89.....		24,358		7,160	31,518		21,641		7,133	28,774
1889-90.....		7,390		8,913	16,303		12,955		11,120	24,075
1890-91.....		5,088	4,670	8,215	17,973		6,778		6,125	12,903
1891-92.....		7,142	3,960	10,535	21,637		10,130	468	5,996	16,594
1892-93.....				10,137	10,137		8,327	6,456	7,840	22,623
1893-94.....				6,775	6,775		17,729	6,967	8,885	33,581
1894-95.....				10,342	10,342		13,351	15,819	4,695	33,865
1895-96.....				9,824	9,824		15,138	13,734	11,309	40,181
1896-97.....				4,925	4,925		5,694	8,069	6,957	20,720
1897-98.....							6,624	8,821	10,989	26,534
1898-99.....							8,138	2,193	15,833	26,164
1899-1900.....		96			96		9,795	257	19,655	29,907
1900-01.....		489			489	403	14,791	12	10,615	25,821
1901-02.....		90		11,553	11,643	3,101	6,831	861	18,839	29,632
1902-03.....		194		17,137	17,331	3,183	5,763	1,636	20,529	31,111
1903-04.....	357	875		7,495	8,727	6,013	8,628	879	29,400	44,920
1904-05.....	602	509	78	1,495	15,684	1,446	7,107	224	22,937	31,764
1905-06.....		715	68	9,308	10,091	4,235	12,268	176	24,780	41,459
1906-07.....		394		14,671	15,065	1,998	5,898	2,374	13,927	24,197
1907-08.....		912		4,371	5,283	5,280	10,555	723	21,073	37,631
1908-09.....	6	1,705		6,817	8,528	5,095	8,906	979	21,527	36,507

1906-07—nine months only.

9-10 EDWARD VII., A. 1910

TABLE showing the number of tons of fresh and salt fish carried over the Intercolonial Railway during each year since 1876.

Year.	FRESH FISH.					SALT FISH.				
	Via Ste. Rosalie.	Via Mont- real.	Via St. John	To Local Stations	Total.	Via Ste. Rosalie.	Via Mont- real.	Via St. John	To Local Stations	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1876-77.....		530	921	527	1,978		551	1,848	802	3,201
1877-78.....		596	1,015	474	2,085		898	1,644	805	3,347
1878-79.....		471	1,336	817	2,624		988	1,038	1,048	2,974
1879-80.....		519	1,362	453	2,334		1,612	2,238	959	4,809
1880-81.....		498	1,879	920	3,297		2,418	937	1,051	4,406
1881-82.....		475	1,619	957	3,051		4,031	1,066	2,487	7,554
1882-83.....		542	384	393	1,319		3,229	759	1,354	5,412
1883-84.....		838	1,682	412	2,932		1,322	1,143	1,224	3,689
1884-85.....		1,062	1,885	484	3,431		3,563	3,600	1,596	8,759
1885-86.....		1,669	1,645	902	4,216		1,680	2,047	3,376	7,103
1886-87.....		1,278	1,572	2,008	4,858		3,236	569	1,747	5,552
1887-88.....		1,533	1,477	1,031	4,041		2,617	476	1,099	4,193
1888-89.....		2,474	2,000	1,870	6,344		3,070	7,746	2,994	13,810
1889-90.....		2,235	1,787	2,111	6,223		2,449	847	3,288	6,584
1890-91.....		2,029	2,788	1,848	6,665		1,953	1,917	3,236	7,106
1891-92.....		1,367	1,746	547	3,660		1,946	928	1,889	4,763
1892-93.....		1,683	1,875	3,340	6,898		3,262	1,811	2,176	7,249
1893-94.....		1,959	2,192	2,224	6,375		2,921	1,814	2,962	7,697
1894-95.....		2,006	3,726	1,160	6,892		2,075	1,849	5,285	10,209
1895-96.....		1,966	3,059	1,319	6,344		1,863	1,087	2,791	5,741
1896-97.....		3,307	3,115	1,286	7,708		2,168	1,176	2,536	5,880
1897-98.....		3,575	3,703	1,052	8,330		1,729	1,066	2,210	5,005
1898-99.....		1,210	2,070	3,305	6,583		1,651	1,198	3,625	5,474
1899-1900.....		2,547	2,706	3,686	8,939		2,421	1,563	2,659	6,643
1900-01.....	37	2,009	3,207	4,125	9,393	360	3,419	1,346	4,643	9,768
1901-02.....	219	3,013	4,373	5,477	13,082	283	3,150	1,413	5,196	10,042
1902-03.....	140	2,269	3,040	4,842	10,289	493	2,808	1,615	6,579	11,495
1903-04.....	539	1,939	3,588	5,002	11,068	225	2,359	564	5,848	8,996
1904-05.....	779	1,902	3,674	5,516	11,871	433	2,673	272	6,759	10,137
1905-06.....	284	2,748	2,439	7,706	13,177	683	2,740	346	6,994	10,763
1906-07.....	320	2,882	3,712	7,400	14,314	307	3,156	416	6,348	10,227
1907-08.....	199	3,288	1,353	6,224	11,064	661	2,856	1,976	7,034	12,527
1908-09.....	312	2,965	2,794	6,946	13,017	668	4,078	1,632	4,866	11,244

1906-07—nine months only.

SESSIONAL PAPER No. 20

STATEMENT of Ocean-borne Passenger business done at the Port of Halifax for the fiscal year ending March 31, 1909.

Name of Steamer.	Number of Passengers.			
	1st	2nd	Steerage.	Total.
Empress of Britain.....	153	57	41	251
Empress of Ireland.....	103	32	38	173
Corsican.....	83	573	1,250	1,906
Grampian.....	63	450	1,011	1,524
Virginian.....	174	1,024	2,305	3,503
Tunisian.....	104	1,038	2,639	3,841
Hesperian.....	45	376	964	1,385
Victorian.....	164	934	2,445	3,543
Carthaginian.....	68	137	469	674
Dominion.....	.....	83	85	168
Volturue.....	1	16	395	412
Uranium.....	.....	12	240	252
Pretorian.....	10	269	380	659
Ryandam.....	.....	.....	366	366
Jelunga.....	.....	2	206	208
Badenia.....	.....	.....	661	661
Lutzow.....	.....	8	566	574
Bremen.....	.....	2	292	294
Armenia.....	.....	.....	148	148
Ionian.....	.....	266	504	770
Pomeranian.....	.....	114	368	482
Siberian.....	36	75	209	320
Mongolian.....	59	192	313	564
Sardinian.....	.....	72	389	461
Laurentian.....	.....	82	87	169
Numidian.....	3	37	264	304
Sicilian.....	.....	60	48	108
Corinthian.....	.....	69	98	167
Kensington.....	.....	194	877	1,071
Southwark.....	.....	66	454	520
Canada.....	3	64	186	253
Haverford.....	.....	10	53	63
Merion.....	.....	11	19	30
Vancouver.....	.....	22	44	66
Total.....	1,069	6,347	18,474	25,890

9-10 EDWARD VII., A. 1910

COMPARATIVE STATEMENT of Ocean-borne Passenger business done at the Port of St. John for the fiscal year ending March 31, 1909.

Name of Steamer.	Number of Passengers.			
	1st	2nd	Immigrant.	Total.
Montreal.....			154	154
Manitoba.....			8	8
Empress of Britain.....			53	53
Lake Champlain.....			4	4
Lake Michigan.....			30	30
Empress of Ireland.....			14	14
Montford.....			32	32
Montezuma.....			23	23
Mount Temple.....			10	10
Lake Erie.....			1	1
Virginian.....	4	4	7	15
Victorian.....	1	2	5	8
Grampian.....			1	1
Corsican.....			4	4
Parisian.....			2	2
Tunisian.....			1	1
Sardinian.....	1		1	2
Cassandra.....	5	2	83	90
Total.....	11	8	433	452

STATEMENT of Ocean-borne Passenger business done at the Port of Quebec for the fiscal year ending March 31, 1909.

Line of Steamers.	Number of Passengers.		
	1st	2nd	Total.
Allan.....	50	387	437
C. P. R.....	37	401	438
Dominion.....	21	338	359
Donaldson.....	10	53	63
Total.....	118	1,179	1,297

SESSIONAL PAPER No. 20

STATEMENT of Ocean-borne Freight Traffic via Halifax for the year ending
March 31, 1909.

Line of Steamers.	Import.	Export.
	Tons.	Tons.
Furness Line.....	14,059	34,183
Pickford & Black S.S. Co.....	8,644	22,939
Elder-Dempster Co.....	4,279	6,690
C. P. R. S.S. Line.....	231	143
Dominion Line.....	6	
Allan Line.....	11,584	3,340
Canada Atlantic & P. S.S.....	1,111	572
Red Cross Line.....	222	338
Manchester Line.....		4,475
Various steamers, tramp and sailing vessels.....	2,896	5,676
Total.....	43,032	78,356

STATEMENT of Ocean-borne Freight Traffic via St. John for the year ending
March 31, 1909.

Line of Steamers.	Import.	Export.
	Tons.	Tons.
C. P. R.....	3,588	1,966
Donaldson.....	4,134	4,095
Allan.....	2,789	8,999 ³⁴⁰ ₂₀₀₀
Furness.....	1,408	18,691 ⁹² ₂₀₀₀
Manchester.....	1,651	9,359 ¹²⁸ ₂₀₀₀
Pickford & Black S.S. Co.....	643	
Elder-Dempster.....	2,335	
South Africa.....		2,639
Head Line.....		3,731 ²⁰⁰ ₂₀₀₀
West Indies.....		1,179 ⁴⁸⁵ ₂₀₀₀
Total.....	16,548	50,628 ⁹⁴³ ₂₀₀₀

9-10 EDWARD VII., A. 1910

WINDSOR BRANCH.

This road is operated by the Dominion Atlantic Railway Company, (formerly the Windsor and Annapolis Railway Company), under a lease which covers also running powers over the Intercolonial Railway between Windsor Junction and Halifax. The company retain two-thirds of the gross earnings, and the government receive one-third of the gross earnings, for maintaining the way and works.

Year.	Miles in oper- ation.	One-third gross earnings.	Proportion credited to line Windsor Junction to Halifax.	Proportion credited to the Windsor Branch.	Maintenance expenses.	Profit.	Loss.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1880-81..	32	28,434 29	7,217 76	21,216 53	20,502 26	714 27	
1881-82..	32	28,461 07	7,407 88	21,052 19	13,099 55	7,953 64	
1882-83..	32	31,199 77	8,085 88	24,113 89	23,103 93	1,009 96	
1883-84..	32	30,428 39	7,409 46	23,018 93	22,140 86	878 07	
1884-85..	32	32,246 30	7,794 95	24,451 35	18,751 96	5,699 39	
1885-86..	32	31,185 63	7,527 52	23,658 11	19,229 49	4,428 62	
1886-87..	32	33,564 58	8,237 00	25,327 58	26,042 33		714 7
1887-88..	32	32,242 85	6,689 30	24,553 55	24,040 33	513 22	
1888-89..	32	37,313 43	8,941 32	28,372 11	20,856 50	7,515 61	
1889-90..	32	39,544 19	9,381 73	30,162 46	18,982 82	11,179 64	
1890-91..	32	39,519 56	9,284 48	33,508 35	28,931 71	1,303 42	
1891-92..	32	42,891 23	9,382 38	30,235 13	19,514 37	13,994 48	
1892-93..	32	43,901 28	9,585 17	34,316 11	16,889 95	17,426 16	
1893-94..	32	41,834 70	8,859 23	32,975 47	17,645 09	15,330 38	
1894-95..	32	50,793 84	11,626 20	39,077 64	14,640 07	24,437 57	
1895-96..	32	47,456 74	10,894 91	36,561 83	16,476 46	20,985 37	
1896-97..	32	54,208 81	13,605 58	40,603 23	10,821 04	29,782 19	
1897-98..	32	48,892 21	11,665 57	37,226 64	18,181 09	14,045 01	
1898-99..	32	56,314 51	13,840 48	42,474 04	12,873 06	29,600 94	
1899-1900	32	62,266 61	14,925 18	47,351 43	12,891 56	34,459 87	
1900-01..	32	62,523 20	15,261 31	47,261 89	16,862 66	30,399 23	
1901-02..	32	65,315 38	15,710 79	49,604 59	16,376 27	33,228 32	
1902-03..	32	56,417 38	13,856 57	42,560 81	17,843 19	24,717 62	
1903-04..	32	72,708 54	19,074 49	53,634 05	24,281 09	29,352 96	
1904-05..	32	66,798 46	16,759 79	50,038 67	26,863 16	23,175 51	
1905-06..	32	65,936 66	16,484 16	49,452 50	17,485 97	31,966 53	
1906-07..	32	61,597 30	16,156 78	45,440 52	15,425 32	30,015 20	
1907-08..	32	76,471 58	20,041 17	56,430 41	37,912 11	18,518 20	
1908-09..	32	75,781 80	19,750 47	56,031 33	36,234 55	19,796 78	

1906-7.—Nine months only.

SESSIONAL PAPER No. 20

PRINCE EDWARD ISLAND RAILWAY.

The following table shows the working expenses, the gross and net earnings, the tons of freight and number of persons carried each year since June 30, 1875, when the road was first opened for traffic:—

Year.	Miles in operation.	Working expenses.	Gross earnings.	Loss.	Tons of freight carried.	No. of passengers carried.
		\$ cts.	\$ cts.	\$ cts.		
1875-76.....	199	214,930 43	118,060 96	96,869 47	28,358	93,964
1876-77.....	199	228,595 25	130,664 92	97,930 33	41,039	93,478
1877-78.....	199	221,599 49	135,899 60	85,699 89	38,668	111,428
1878-79.....	199	223,313 12	125,855 99	97,457 21	38,923	105,046
1879-80.....	199	164,640 55	113,851 11	50,789 44	37,208	90,533
1880-81.....	199	203,122 88	131,131 43	71,991 45	45,336	102,937
1881-82.....	199	228,259 97	137,267 54	90,922 43	48,315	118,436
1882-83.....	199	252,808 41	146,170 42	106,637 99	51,920	117,162
1883-84.....	199	236,428 13	144,504 12	91,924 01	51,841	118,988
1884-85.....	211	211,207 01	158,588 06	52,618 95	57,346	130,423
1885-86.....	211	216,744 34	155,584 36	61,159 98	57,913	120,374
1886-87.....	211	204,237 37	155,303 37	48,934 00	63,589	103,067
1887-88.....	211	229,639 95	158,365 62	71,276 33	59,603	131,246
1888-89.....	211	247,559 44	171,369 56	76,189 89	55,682	152,780
1889-90.....	211	266,485 85	164,971 78	105,514 07	51,604	133,099
1890-91.....	211	257,990 08	174,258 05	83,732 03	59,511	145,508
1891-92.....	211	289,706 38	157,442 69	132,263 69	51,065	139,389
1892-93.....	211	226,422 17	162,690 42	63,731 75	56,718	132,111
1893-94.....	211	226,891 06	158,533 83	68,357 23	53,577	123,727
1894-95.....	211	232,105 19	149,654 71	83,250 41	48,325	125,089
1895-96.....	211	225,138 56	146,476 54	78,662 02	46,395	122,586
1896-97.....	211	240,489 90	153,443 13	87,046 77	52,151	121,493
1897-98.....	211	231,418 74	158,950 61	72,468 13	57,539	126,510
1898-99.....	211	218,053 01	165,021 03	53,040 98	57,968	129,667
1899-1900.....	211	220,931 81	174,738 73	46,193 08	62,227	147,471
1900-01.....	211	261,766 24	193,833 48	67,883 76	73,696	157,793
1901-02.....	210	270,159 97	197,999 97	72,160 00	75,381	184,748
1902-03.....	209	259,637 82	217,714 24	41,923 58	80,582	205,265
1903-04.....	209	335,695 44	234,399 03	101,305 41	86,286	224,517
1904-05.....	209	370,464 44	217,330 61	153,133 83	75,969	235,194
1905-06.....	261	294,253 16	257,270 57	36,982 59	87,162	256,092
1906-07.....	267	283,148 50	215,434 97	67,713 53	67,144	232,371
1907-08.....	267	399,947 79	304,579 83	95,367 96	97,250	317,828
1908-09.....	267-5	400,350 00	311,319 63	89,010 78	106,090	352,758

1906-7 nine months only.

9-10 EDWARD VII., A. 1910

CANALS.

The cost of construction and enlargement of the canals and improvements to the rivers and lakes up to March 31, 1909, is as follows:—

Route from Montreal to Port Arthur.

	Original Construction of Canals.	Enlargement of Canals.	Improvement to St. Lawrence River and Lakes.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Lachine Canal	2,589,532 85	9,570,566 95	.....	12,160,099 80
Lake St. Louis .....	.....	.....	298,176 11	298,176 11
Soulanges Canal	6,973,113 38	.....	.....	6,973,113 38
Beauharnois Canal (superseded by the Soulanges Canal)	1,636,690 26	.....	.....	1,636,690 26
Lake St. Francis .....	.....	.....	75,906 71	75,906 71
Cornwall Canal	1,945,624 73	5,289,952 87	.....	7,234,677 60
Williamsburg Canal	1,320,655 54	10,696 26	.....	.....
Farran's Point Canal .....	.....	877,090 57	.....	.....
Rapide Plat Canal .....	.....	2,158,242 00	.....	10,485,611 69
Galops Canal .....	.....	6,118,927 32	.....	.....
Galops Rapids .....	.....	.....	1,037,837 79	1,037,837 79
St. Lawrence River and Reaches .....	.....	.....	711,238 93	711,238 93
North Channel .....	.....	.....	1,684,389 51	1,684,389 51
Murray Canal	1,248,946 71	.....	.....	1,248,946 71
Welland Canal	7,693,824 03	20,644,791 99	.....	28,338,616 02
Sault Ste. Marie Canal	4,821,723 47	.....	.....	4,821,723 47
Total	28,230,110 97	44,669,367 96	3,807,549 05	76,707,027 98

Route from Lachine to Ottawa.

	Original Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
Ste. Anne's Lock	134,456 51	1,035,759 12	1,170,215 63
Carillon and Grenville	63,053 64	4,119,039 32	4,182,092 96
Culbute Canal (superseded)	382,776 46	.....	382,776 46
Total	580,286 61	5,154,798 44	5,735,085 05

Construction by the Imperial Government is not included. Records relating to same were kept in Ordnance Office, Montreal, and were destroyed by fire in 1852.

Route from Ottawa to Kingston.

	Original Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
Rideau Canal	4,085,889 21	.....	4,085,889 21
Tay Canal	489,599 23	.....	489,599 23
Total	4,575,488 44	.....	4,575,488 44

SESSIONAL PAPER No. 20

Route from St. Johns, P.Q., to Sorel.

	Original Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
Chambly Canal.	637,056 76	13,464 92	650,521 68
St. Ours Lock	121,537 65	.....	121,537 65
Total	758,594 41	13,464 92	772,059 33

Route from Lake Ontario to Georgian Bay.

	Original Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
Trent Canal	6,873,501 09	.....	6,873,501 09
Total	6,873,501 09	.....	6,873,501 09

Route from Atlantic Ocean to Bras d'Or Lakes.

	Original Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
St. Peter's Canal—Cape Breton	248,762 84	399,784 30	648,547 14
Total	248,762 84	399,784 30	648,547 14

TABLE showing the dates of opening and closing of the canals for the season of 1908.

Name of Canal.	Navigation opened 1908.	Navigation closed 1908.
Lachine	May 2	December 2
Soulanges	" 1	" 2
Cornwall	" 1	" 4
Williamsburg.	{ Fairan's Point	" 5
	{ Rapide Plat.	" 5
	{ Galops	" 5
Murray	April 20	" 9
Welland	" 15	" 17
Sault Ste. Marie	" 21	" 15
Grenville	May 1	November 30
Carillon	" 1	" 30
Ste. Anne's	April 27	" 30
Chambly	May 4	" 30
St. Ours	April 28	" 30
Rideau	{ At Ottawa	" 30
	{ At Kingston	" 19
	{ From Lake Simcoe to Balsam Lake	" 16
Trent	" Balsam Lake to Lakefield	October 7
	" Lakefield to Peterborough	November 5
	" Peterborough to Healey Falls	" 5
St. Peter's	" 23	" 14
	" 1	January 2, 1909

9-10 EDWARD VII., A. 1910

(3)—COMPARATIVE Statement of tons of freight which passed through the canals in seasons of 1907 and 1908.

Name of Canal.	Season of 1907.	Season of 1908.	Number of trips of vessels.	
			Season of 1907.	Season of 1908.
	Tons.	Tons.		
Welland Canal.....	1,614,132	1,703,453	1,582	2,351
St. Lawrence Canals ..	2,100,466	2,009,102	10,086	8,025
Chambly Canal.....	625,282	503,276	4,179	3,594
Ottawa River Canals.....	337,850	258,527	2,034	1,882
Rideau Canal.....	82,369	89,640	6,356	7,981
St. Peter's Canal.....	73,167	72,015	1,337	1,380
Trent Canal.....	69,806	81,690	4,785	5,025
Murray Canal....	52,402	25,901	1,053	998
Sault Ste. Marie Canal.	15,588,165	12,759,216	6,349	5,293
Total.....	20,543,639	17,502,820	38,161	38,529

CANALS

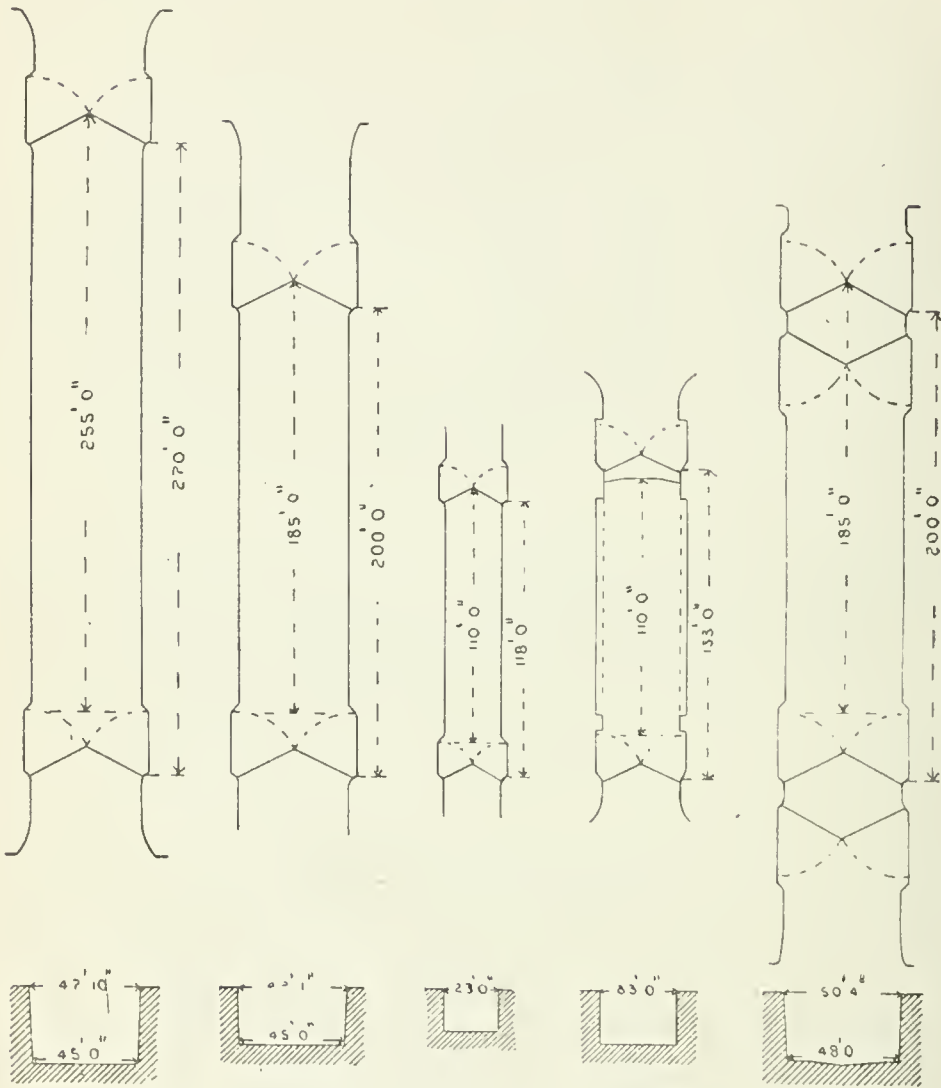
DIAGRAM SHOWING DIMENSIONS OF THE SMALLEST LOCK ON EACH
CANAL. LENGTHS AND LOCATIONS OF THE DOMINION
CANALS AND THE INTERMEDIATE WATERS

WITH

DIMENSIONS OF LOCKS

9-10 EDWARD VII., A. 1910

Plans and Sections showing the Dimensions of the Smallest Lock on each



Lachine

St Anne,
St Ours,
Carillon,
& Grenville.

Chambly

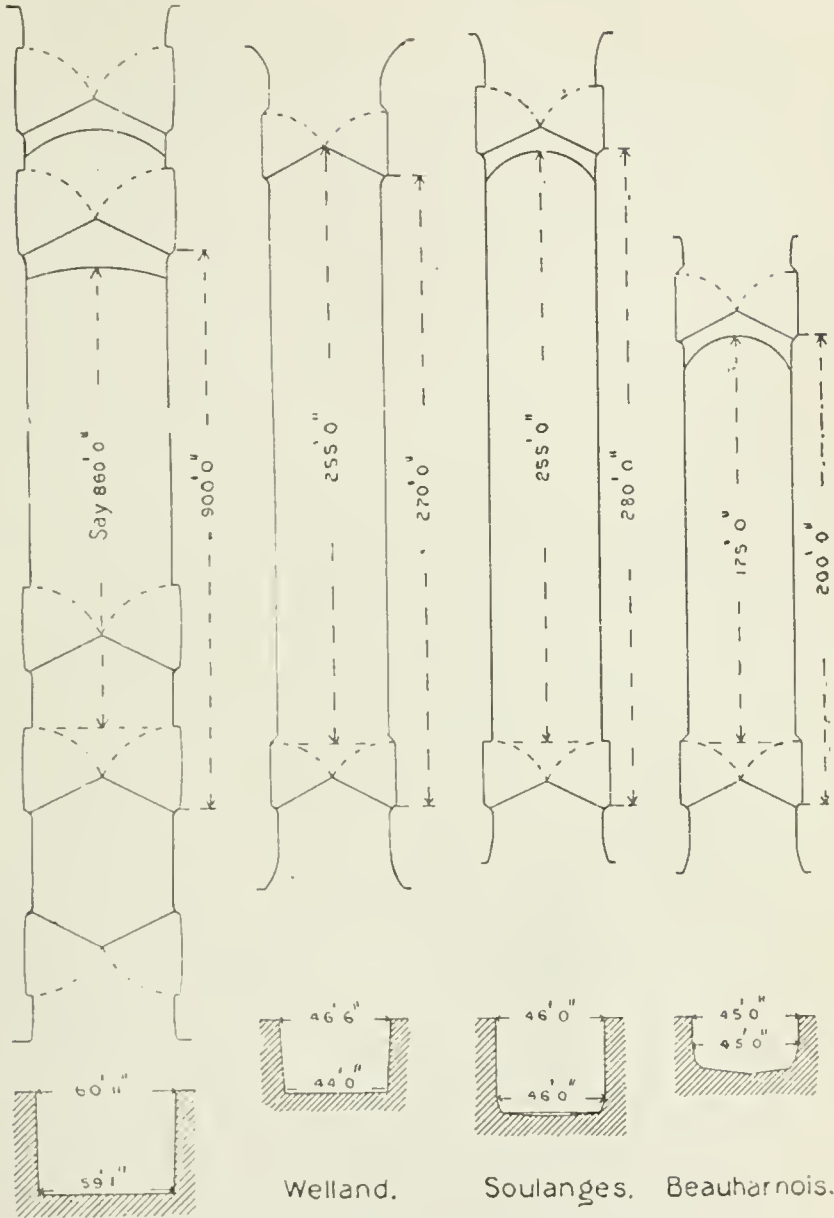
Rideau

St Peter's

There are no locks on the through route between Lake Superior and

SESSIONAL PAPER No. 20

of the Canadian Canal Systems except the Trent Canal, which is uncompleted.

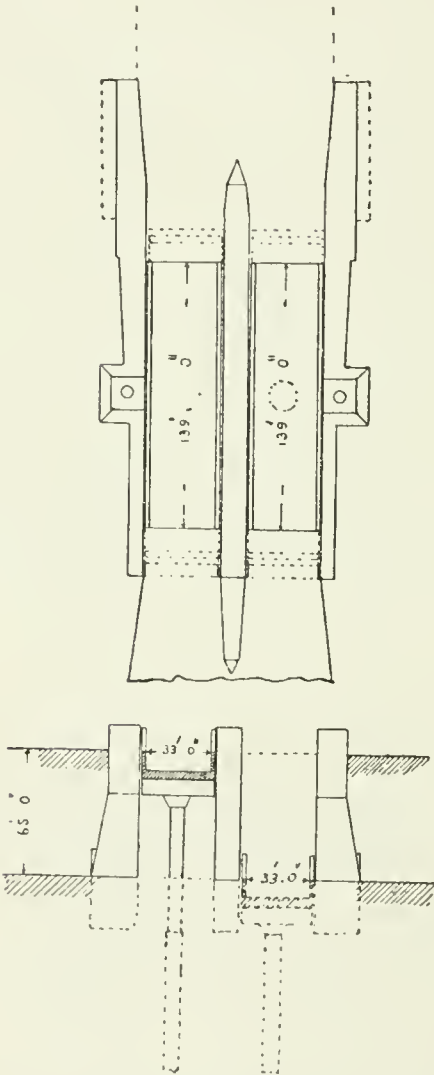


Sault Ste Marie.

Montreal of less dimension than those of the Welland Canal Locks.

TRENT CANAL

Hydraulic Lift-Lock at Peterborough
65 Feet Lift



CANALS

The following statements give in concise form the essential features of the government canal works and the intermediate water navigation :—

The canal systems of the Dominion, under government control in connection with lakes and navigable rivers are as follows:—

First.—The through route between Montreal and Port Arthur or Fort William on the west shore of Lake Superior (14 feet minimum depth of water.)

	Statute Miles.
1. Lachine Canal....	8½
Lake St. Louis and River St. Lawrence....	16
2. Soulanges Canal....	14
Lake St. Francis and River St. Lawrence....	33
3. Cornwall Canal....	11
River St. Lawrence....	5
4. Farran's Point Canal....	1¼
River St. Lawrence....	10
5. Rapide Plat Canal....	3¾
River St. Lawrence....	4
6. Galops Canal....	7½
River St. Lawrence and Lake Ontario....	236
7. Welland Canal....	26¾
Lake Erie, Detroit River, Lake St. Clair, Lake Huron, &c.	580
8. Sault Ste. Marie Canal....	1¼
Lake Superior to Port Arthur or to Fort William....	273
Total....	1,230¼
To Duluth....	1,354
Chicago....	1,286

Second.—Ottawa to Lake Champlain.

1. Grenville. 2. Carillon. 3. Ste. Anne's. 4. Chambly. 5. St. Ours Canals.

Third.—Ottawa to Kingston and Perth.

1. Rideau Canal.

Fourth.—Lake Ontario at Trenton to Lake Huron.

1. Trent Canal (not completed).

Fifth.—Ocean to the Bras d'Or Lakes.

1. St. Peter's Canal.

RIVER ST. LAWRENCE AND LAKES.

The River St. Lawrence, with the system of canals established on its course above Montreal, and the Lakes Ontario, Erie, St. Clair, Huron and Superior, with connecting canals, afford a course of water communication extending from the Straits of Belle Isle to Port Arthur, or Fort William on the west coast of Lake Superior, a distance of 2,233 statute miles. The distance to Duluth is 2,357 miles. The distance to Chicago, 2,289 miles.

From the Straits of Belle Isle, at the mouth of the St. Lawrence, to Montreal, the distance is 1,003 statute miles. From Quebec to Montreal the distance is 160

SESSIONAL PAPER No. 20

miles. Owing to the shallowness of the waters on a portion of the river between these two places, particularly through Lake St. Peter, vessels drawing more than from 10 to twelve feet were formerly barred from passage for the greater part of the season of navigation. In 1826 the question of deepening the channel was first definitely mooted, but it was not until 1844 that any dredging operations were begun. In that year, the deepening of a new straight channel was commenced, but the scheme was abandoned in 1847. In 1851 the deepening of the present channel was begun. At that time the depth of the channel at low water was 10 feet 6 inches. By the year 1869 this depth had been increased to 20 feet, by 1882 to 25 feet, and by the close of 1888 the depth of 27½ feet, at low water, was attained for a distance of 108 miles from Montreal to a point within tidal influence. This work is now being continued by the Department of Marine and Fisheries. The channel has a depth of 30 feet at extreme low water, and a minimum width of 450 feet, extending to 600 feet at points of curvature. The channel is lighted and buoyed. A 35 foot deep channel was commenced in 1907.

Navigation, which is closed by ice during the winter months, opens about the end of April.

Montreal has by this work been placed at the head of ocean navigation, and here, the canal systems of the River St. Lawrence begin, overcoming the various rapids by which the river channel upwards is obstructed, and giving access through the St. Lawrence canals, the Welland canal, the great lakes and the Sault Ste. Marie canal, to the head of Lake Superior.

The difference in level between the point on the St. Lawrence, near Three Rivers, where tidal influences ceases, and Lake Superior, is about 600 feet.

The Dominion canals, constructed between Montreal and Lake Superior, are the Lachine, Soulanges, Cornwall, Farran's Point, Rapide Plat, Galops, Murray, Welland and Sault Ste. Marie. Their aggregate length is 73 miles; total lockage (or height directly overcome by locks), 551 feet. The number of locks through which a vessel would pass in its passage from Montreal, at the head of ocean navigation, to the head of Lake Superior, is 48. The Soulanges canal takes the place of the Beauharnois canal, abandoned for navigation purposes.

Communication between Lakes Huron and Superior is obtained by means of the Canadian Sault Ste. Marie canal, and also by the St. Mary's Falls canal, situated on the United States side of the River St. Mary.

Improvements of the United States channels in St. Mary's river through Hay lake, east of the Sault Ste. Marie, have been carried on for several years past. The dredged areas now total 34 miles in length, with a minimum width of 300 feet, which is increased at angles and other critical points to 1,000 feet. The depth is 20 feet at the mean stage of water. In the year 1903 excavation was commenced to afford 21 feet at the lowest stage of water.

It is important to note that the enlargement of canals on the main route between Montreal and Lake Erie comprises locks of the following minimum dimensions: Length, 270 feet; width, 45 feet; depth of water on sills, 14 feet. The length of the vessels to be accommodated is limited to 255 feet. At Farran's, in the canal of that name, the lock is 800 feet long. A similar lock is built at Iroquois on the Galops canal, the object being to pass a full tow at one lockage.

LACHINE CANAL.

Length of canal.	8½ statute miles
Number of locks.	5
Dimensions of locks.	270 feet by 45 feet
Total rise or lockage.	45 feet
Depth of water on sills, at two locks.	18 "
Depth of water on sills, at three locks.	14 "
Average width of new canal.	150 "

SESSIONAL PAPER No. 20

The old lift locks, 200 feet by 45 feet, are still available, with 9 feet of water on mitre sills. The two lower north locks, however, have been lengthened to 270 feet, and have 16½ feet of water on the sills.

The canal consists of one channel, with two distinct systems of locks, the old and the enlarged. There are two lock entrances at each end.

The canal extends from the city of Montreal to the town of Lachine, overcoming the St. Louis rapids, the first of the series of rapids which bar the ascent of the River St. Lawrence. They are 986 miles distant from the Straits of Belle Isle.

SOULANGES CANAL.

Length of canal.	14 statute miles
Number of locks—	
Lift.	4
Guard.	1
Dimensions of locks.	230 feet by 45 feet
Total rise or lockage.	84 feet
Depth of water on sills.	15 "
Breadth of canal at bottom.	100 "
Breadth of canal at water surface.	164 "

The canal extends from Cascades Point to Coteau Landing, overcoming the Cascades rapids, Cedars rapids and Coteau rapids.

From the head of the Lachine to the foot of the Soulanges the distance is sixteen miles.

CORNWALL CANAL.

Length of canal.	11 statute miles
Number of locks.	6
Dimensions of locks.	270 feet by 45 feet
Total rise or lockage.	48 feet
Depth of water on sills.	14 "
Breadth of canal at bottom.	100 "
Breadth of canal at water surface.	164 "

The old lift locks, 200 feet by 50 feet, are also available, with nine feet of water on mitre sills.

From the head of the Soulanges to the foot of the Cornwall canal there is a stretch through Lake St. Francis 33 miles, which is navigable for vessels drawing fourteen feet.

The Cornwall canal extends past the Long Sault rapids from the town of Cornwall to Dickinson's Landing.

WILLIAMSBURG CANALS.

The Farran's Point, Rapide Plat and Galops canals are collectively known as the Williamsburg canals.

FARRAN'S POINT CANAL.

Length of canal.	1¼ mile
Number of locks.	1
New lock.	800 feet by 45 feet
Old lock.	200 "
Total rise or lockage.	3½ feet
Depth of water on sills of new lock.	14 "
Depth of water on sills of old lock.	9 "
Breadth of canal at bottom.	90 "
Breadth of canal at water surface.	154 "

9-10 EDWARD VII., A. 1910

From the head of the Cornwall canal to the foot of Farran's Point canal, the distance on the River St. Lawrence is five miles. The latter canal enables vessels, ascending the river to avoid Farran's Point rapid, passing the full tow at one lockage. Descending vessels run the rapids with ease and safety.

RAPIDE PLAT CANAL.

Length of canal.. . . .	3 $\frac{2}{3}$ miles.
Number of locks.. . . .	2
Dimensions of locks.. . . .	270 feet by 45 feet.
Total rise or lockage.. . . .	11 $\frac{1}{2}$ feet.
Depth of water on sills.. . . .	14 "
Breadth of canal at bottom.. . . .	80 "
Breadth of canal at water surface.. . . .	152 "

The old lift-lock, 200 feet by 45. is also available, with nine feet of water on mitre sills.

From the head of Farran's Point canal to the foot of Rapide Plat canal, there is a navigable stretch of 10 $\frac{1}{2}$ miles. The canal was formed to enable vessels ascending the river to pass the rapids at that place. Descending vessels run the rapids safely.

GALOPS CANAL.

Length of canal.. . . .	7 $\frac{1}{2}$ miles.
Number of locks.. . . .	3
Dimensions of locks, one of which is a guard-lock..	} 1-800 by 45 1-270 by 45 1-285 by 45
Total rise or lockage.. . . .	
Depth of water on sills.. . . .	
Breadth of canal at bottom.. . . .	80 "
Breadth of canal at surface of water.. . . .	144 "

From the head of Rapide Plat canal to Iroquois, at the foot of the Galops canal, the St. Lawrence is navigable 4 $\frac{1}{2}$ miles. The canal enables vessels to overcome the rapids at Pointe aux Iroquois, Port Cardinal and the Galops.

MURRAY CANAL.

Length between eastern and western piers.. . . .	5 $\frac{1}{2}$ miles.
Breadth at bottom.. . . .	80 feet.
Breadth at water surface.. . . .	120 "
Depth below lowest known lake level.. . . .	11 "
No locks.	

This canal extends through the Isthmus of Murray, giving connection westward between the head waters of the Bay of Quinté and Lake Ontario, and thus enabling vessels to avoid the open lake navigation.

SESSIONAL PAPER No. 20

WELLAND CANAL.

Main line from Port Dalhousie, Lake Ontario, to Port Colborne, Lake Erie.

	Old Line.	Enlarged on New Line
Length of canal..	27 $\frac{1}{2}$ miles.	26 $\frac{3}{4}$ miles.
Pairs of guard-gates (formerly 3)	1	1
Number of locks. $\left\{ \begin{array}{l} \text{guard} \\ \text{lift} \end{array} \right.$	$\left\{ \begin{array}{l} 1 \\ 26 \end{array} \right.$	$\left\{ \begin{array}{l} 1 \\ 25 \end{array} \right.$
Dimensions. $\left\{ \begin{array}{l} 1 \text{ (tidal) } 230 \times 45 \\ 1 \text{ lock } 200 \times 45 \\ 1 \text{ lock } 200 \times 45 \\ 24 \text{ locks } 150 \times 45 \end{array} \right.$		270 feet x 45 feet.
Total rise or lockage.	326 $\frac{1}{4}$ feet.	326 $\frac{3}{4}$ feet.
Depth of water on sills.	10 $\frac{1}{4}$ "	14 "

WELLAND RIVER BRANCHES.

Length of canal—

Port Robinson Cut to River Welland.	2,622 feet.
From the canal at Welland to the river, via lock at Aqueduct.	300 "
Chippewa Cut to River Niagara.	1,020 "
Number of locks—one at Aqueduct and one at Port Robinson.	2
Dimensions of locks.	150 by 26 $\frac{1}{2}$ feet.
Total lockage from the canal at Welland down to River Welland.	10 feet.
Depth of water on sills.	9 feet 10 inches.

GRAND RIVER FLEDER.

Length of canal.	21 miles.
Number of locks.	2
Dimensions of locks. $\left\{ \begin{array}{l} 1 \text{ of } 150 \text{ by } 26\frac{1}{2} \text{ ft.} \\ 1 \text{ of } 200 \text{ by } 45 \text{ ft.} \end{array} \right.$	
Total rise or lockage.	7 to 8 feet.
Depth of water on sills.	9 feet.

PORT MAITLAND BRANCH.

Length of canal.	1 $\frac{3}{4}$ miles.
Number of locks.	1
Dimensions of locks.	185 feet by 45 feet.
Depth of water on sills.	7 $\frac{1}{2}$ feet.
Total rise or lockage.	1 to 8 feet

The Welland canal has two entrances from Lake Ontario, at Port Dalhousie, one for the old, the other for the new canal.

From Port Dalhousie to Allanburg, 11 $\frac{3}{4}$ miles, there are two distinct lines of canal in operation, the old line and the enlarged or new line.

From Allanburg to Port Colborne, a distance of 15 miles, there is only one channel, the old canal having been enlarged.

From the head of the Welland canal there is a deep water navigation through Lake Erie, the Detroit river, Lake St. Clair, the St. Clair river, Lake Huron and River St. Mary to the Sault canal, a distance of about 580 miles. From the Sault the distance through Lake Superior to Port Arthur is 274 miles, and to Duluth 397 miles.

9-10 EDWARD VII., A. 1910

SAULT STE. MARIE CANAL.

Length of Canal, between the extreme ends of the entrance piers.	1 $\frac{1}{30}$ miles or 7,472 feet
Number of locks.	1
Dimensions of locks.	900 feet by 60 feet at water level; width at lock bottom, 59 feet.
Depth of water on sills (at lowest known water level).	19 feet 3 inches.
Total rise or lockage (mean).	19 feet.
Breadth of canal at bottom.	141 feet 8 inches.
Breadth at surface of water.	150 feet.

This canal has been constructed through St. Mary's island, on the north side of the rapids of the River St. Mary, and, with that river, gives communication on Canadian territory between Lakes Huron and Superior.

MONTREAL, OTTAWA AND KINGSTON.

This route extends from the harbour of Montreal to the port of Kingston, passing through the Lachine canal, the navigation section of the lower River Ottawa, and the Ottawa canals, to the city of Ottawa; thence by the River Rideau and the Rideau canal to Kingston, on Lake Ontario—a total distance of 245 $\frac{3}{8}$ miles.

After leaving the Lachine canal the works constructed to overcome difficulties of navigation are:—

OTTAWA RIVER CANALS.

The. Ste. Anne's Lock. Carillon Canal. Grenville Canal.

RIDEAU CANAL.

The total lockage (not including that of the Lachine canal) is 509 feet (345 rise, 164 fall) and the number of locks is 55.

The following table exhibits the intermediate distances from Montreal harbour:—

Sections of Navigation.	Interme- diate Distance.	Total Distance from Montreal.
	Miles.	Miles.
The Lachine Canal	8 $\frac{1}{2}$	
From Lachine to Ste. Anne's Lock.	15 $\frac{1}{2}$	23 $\frac{1}{2}$
Ste. Anne's Lock and piers.	$\frac{1}{8}$	23 $\frac{3}{8}$
Ste. Anne's Lock to Carillon Canal	27 $\frac{3}{4}$	50 $\frac{3}{8}$
The Carillon Canal.	$\frac{3}{4}$	51 $\frac{1}{8}$
From Carillon to Grenville Canal.	6 $\frac{1}{4}$	57 $\frac{3}{8}$
The Grenville Canal.	5 $\frac{3}{4}$	63 $\frac{3}{8}$
From the Grenville Canal to entrance of Rideau Navigation	56 $\frac{1}{4}$	119 $\frac{3}{8}$
Rideau Navigation ending at Kingston.	126 $\frac{1}{4}$	245 $\frac{3}{8}$

STE. ANNE'S LOCK.

	New Lock.	Old Lock.
Length of canal.	$\frac{1}{8}$ mile	$\frac{1}{8}$ mile.
Number of locks.	1	1
Dimensions of locks.	200 x 45 feet.	190 x 45 feet.
Total rise or lockage.	3 feet.	3 feet.
Depth on sills.	9 "	6 "

SESSIONAL PAPER No. 20

This work, with guide piers above and below, surmounts the Ste. Anne's rapids between Ile Perrot and the head of the Island of Montreal, at the outlet of that portion of the River Ottawa which forms the Lake of Two Mountains, $23\frac{1}{2}$ miles from Montreal harbour.

THE CARILLON CANAL.

Length of canal.	$\frac{3}{4}$ mile.
Number of locks.	2
Dimensions of locks.	200 x 45 feet.
Total rise or lockage.	16 feet.
Depth of water on sills.	9 "
Breadth of canal at bottom.	100 "
Breadth of canal at water surface.	110 "

This canal overcomes the Carillon rapids.

From Ste. Anne's lock to the foot of the Carillon canal is a navigable stretch of 27 miles, through the Lake of Two Mountains and the River Ottawa.

By the construction of the Carillon dam across the River Ottawa the water at that point is raised 9 feet, enabling the river above to be used for navigation.

GRENVILLE CANAL.

Length of canal.	$5\frac{3}{4}$ miles.
Number of locks.	5
Dimensions of locks.	200 x 45 feet.
Total rise or lockage.	$43\frac{3}{4}$ feet.
Depth of water on sills.	9 "
Breadth of canal at bottom.	40 to 50 feet.
Breadth of canal at surface of water.	50 to 80 feet.

This canal, by which the Long Sault rapids are avoided, is about 56 miles below the city of Ottawa, up to which point the River Ottawa affords unimpeded navigation.

RIDEAU NAVIGATION.

The Rideau system connects the River Ottawa, at the city of Ottawa, with the eastern end of Lake Ontario, at Kingston.

Length of navigation waters.	126 $\frac{1}{4}$ miles.
Number of locks from Ottawa to Kingston.	$\left\{ \begin{array}{l} 33 \text{ ascending.} \\ 14 \text{ descending.} \end{array} \right.$
Total lockage. 457 $\frac{1}{2}$	$\left\{ \begin{array}{l} 292\frac{1}{4} \text{ rise and} \\ 165\frac{1}{4} \text{ fall.} \end{array} \right.$ at high water.
Dimensions of locks.	134 x 33 feet.
Depth of water on sills.	5 feet.
Navigation depth through the several reaches.	5 "
Breadth of canal reaches at bottom.	$\left\{ \begin{array}{l} 54 \text{ feet in rock.} \\ 60 \text{ feet in earth.} \end{array} \right.$
Breadth of canal at surface of water.	80 feet in earth.

9-10 EDWARD VII., A. 1910

PERTH BRANCH.

Length of canal.	7 miles.
Number of locks.	2
Dimensions of locks.	134 feet x 33 feet.
Total rise or lockage.	26 "
Depth of water on sills.	5 " 6 inches.
Length of dam.	200 "
Breadth of canal at surface of water.	80 "
Breadth of canal at bottom.	{ 40 " in rock. 60 " in clay.

The Perth branch of the Rideau canal affords communication between Beveridge's bay, on Lake Rideau, and the town of Perth.

The summit level of the Rideau system is at upper Lake Rideau, but several of the descending reaches are also supplied by waters which have been made tributary to them. The following description gives the sources of supply:—

From the summit, the route towards Ottawa follows the Rideau river, and that towards Kingston follows the River Cataraqui. The supply of water for the canal is derived from the reserves given in detail below.

These may be divided into three systems, viz:—

1. The summit level, supplied by the Wolf lake system.
2. The eastern descending level to Ottawa, supplied by the River Tay system, discharging into Lake Rideau.

The southwest descending level to Kingston, supplied by the Mud lake system, formerly known as the Devil lake system, discharging into Lake Opinicon.

Lake Opinicon receives the waters of Buck lake and Rock lake.

All these waters on the descending level, supplemented by those of Lake Loughboro', flow to Cranberry lake, which, discharging through Round Tail outlet, forms the River Cataraqui. The river, rendered navigable by dams at various points, affords a line of navigation to Kingston.

RICHELIEU AND LAKE CHAMPLAIN.

This system, commencing at Sorel, at the confluence of the Rivers St. Lawrence and Richelieu, 46 miles below Montreal, extends along the River Richelieu, through the St. Ours lock to the basin at Chambly; thence, by the Chambly canal, to St. Johns, and down the River Richelieu to Lake Champlain. The distance from Sorel to the boundary line is 81 miles.

At Whitehall, the southern end of Lake Champlain is entered, and connection is obtained with the River Hudson, by which the city of New York is directly reached. From the boundary line to New York the distance is 330 miles.

The following table shows the distances between Sorel and New York:—

Section of Navigation.	Inter- mediate Distance.	Tota Distances.
	Miles.	Miles.
Sorel to St. Ours Lock.	14	14
St. Ours Lock to Chambly Canal.	32	46
Chambly Canal.	12	58
Chambly Canal to boundary line.	23	81
Boundary line to Champlain Canal.	111	192
Champlain Canal to junction with Erie Canal.	66	258
Erie Canal from junction to Albany.	7	265
Albany to New York.	146	411

SESSIONAL PAPER No. 20

ST. OURS LOCK AND DAM.

Length.	$\frac{1}{8}$ mile.
Number of locks.	1
Dimensions of lock.	200 feet by 45 feet.
Total rise or lockage.	5 feet.
Depth of water on sills.	7 "
Length of dam in western channel.	690 "

At St. Ours, 14 miles from Sorel, the River Richelieu is divided by a small island into two channels. The St. Ours lock is in the eastern channel.

There is a navigable depth in the Richelieu of 7 feet between St. Ours lock and Chambly basin, a distance of 32 miles.

CHAMBLY CANAL.

Length of canal.	12 miles.
Number of locks.	9
Dimensions of locks—	
Guard lock No. 1 at St. Johns.	122 feet
Lift lock No. 2.	124 "
Lift locks Nos. 3, 4, 5, 6.	118 "
Lift locks Nos. 7, 8, 9 combined.	125 "
Total rise or lockage.	74 "
Depth of water on sills.	7 "
Breadth of canal at bottom.	36 "
Breadth of canal at surface of water.	60 "

} From $22\frac{1}{2}$
to 24 feet
wide.

This canal succeeds the 32 miles of navigable water between St. Ours lock and Chambly basin. The canal overcomes the rapids between Chambly and St. Johns.

TRENT CANAL.

The term 'Trent canal' is applied to a series of water stretches, which do not, however, form a connected system of navigation, and which, in the present condition, are efficient only for local use. By various works this local use has been extended, and by others, now in progress and contemplation, this will become a through route between Lake Ontario and Lake Huron.

The series is composed of a chain of lakes and rivers, extending from Trenton, at the mouth of the River Trent, on the Bay of Quinté, Lake Ontario, to Lake Huron.

Many years ago the utilizing of these waters for the purpose of through water communication between Lake Huron and Lake Ontario was projected.

The course, as originally contemplated and modified, is as follows :—

Through the River Trent, Rice Lake, the River Otonabee and Lakes Clear, Stony, Lovesick, Deer, Buckhorn, Chemong, Pigeon, Sturgeon and Cameron to Lake Balsam, the summit water, about 165 miles from Trenton; from Lake Balsam by a canal and the River Talbot to Lake Simcoe. The route from Lake Simcoe to Georgian Bay, Lake Huron has not yet been determined.

The full execution of the scheme, commenced by the Imperial government in 1837, was deferred. By certain works, however, below specified, sections of these waters have been made practicable for navigation, and the whole scheme is now being carried out. A branch of the main route, extending from Sturgeon Lake south, affords communication with the town of Lindsay, and, through Lake Seugog, to Port Perry, a distance of 180 miles from Trenton.

9-10 EDWARD VII., A. 1910

The following table gives the distance of navigable and unnavigable portions:—

1. From Trenton, on Bay of Quinte, to Rice lake, as present being improved to give 8 feet 4 inches on lock sills, and 9 feet in reaches. 57 miles.
Of this distance, from Healy Falls to Hastings, a distance of about twenty miles is already navigable for 6 feet draught.
2. From lower end of Rice lake to Gamebridge on Lake Simcoe, navigable with a minimum depth of 6 feet. . 121 miles.
3. Across Lake Simcoe to Narrows near Orillia, navigable with minimum depth of 6 feet. 15 miles.
4. Narrows to Washago, on Lake Couchiching, navigable with minimum depth of 6 feet. 10 miles.

From the main line of the canal in Sturgeon lake near Sturgeon point, approximately 144 miles from Trenton, a branch runs through Lindsay to Port Perry via the Scugog river and lake, a distance of about 36 miles. South of Lindsay navigation is limited to about 4 feet draught. A new concrete lock and dam are now under construction at Lindsay.

The all-river route from Trenton, on the Bay of Quinte, to Rice lake was fully decided upon by the government during the session of 1907, and the work of construction was begun that fall. The improvement is carried out on the principle of damming the river at suitable points by means of dams, and connecting the pools thus created by means of locks. The locks on this division will be 175 feet long, 33 feet wide, with 8 feet 4 inches of water on the sills. In the reaches there will be a minimum depth of 9 feet of water. For the purpose of construction, this division of 57 miles has been divided into seven sections, five of which are under contract. Rice lake is 369 feet above low water level of Lake Ontario, which height will probably be overcome by 18 locks.

The works by which the Trent navigation has been improved to date comprise short canals with locks at Hastings; Peterborough; Peterborough to Lakefield 7 locks, one being an hydraulic lift; Young's Point, Burleigh Falls, Lovesick, Buckhorn, Bobcaygeon, Fenelon Falls, Rosedale, and six locks between Balsam and Simcoe lakes, one being an hydraulic lift.

Also dams at Healy Falls, Hastings, Peterborough, Peterborough to Lakefield, 6; Young's Point, Burleigh, Lovesick, Buckhorn, Bobcaygeon, Fenelon Falls, Rosedale and three between Balsam and Simcoe lakes.

Bridges have also been built at many of the locks and at other places.

At Healy Falls, about 37 miles from Trenton, a timber dam maintains six feet navigation to Hastings, a distance of about 14 miles.

At Hastings is a masonry lock and a timber dam which maintain navigation on the Trent river, Rice lake and the Otonabee river to Peterborough, a distance of about 36 miles.

At Peterborough, 87 miles from Trenton, is a masonry lock and a concrete dam which maintain navigation through Little lake to lock No. 6 of the Peterborough-Lakefield Division, a distance of about three-quarters of a mile.

From Peterborough to Lakefield, navigation is maintained on the Otonabee river by a series of concrete locks and timber dams as follows:—

Leaving Little lake through lock No. 6, in a distance of about half a mile, the hydraulic lift lock is reached, where there is a lift of 65 feet into a reach which extends to lock No. 5, about five miles from Peterborough, the last mile only of this reach being in the river; from here to Lakefield, locks 5, 4, 3, 2 and 1, with their respective dams, give navigation to Lakefield, about ten miles from Peterborough, or 97 from Trenton, and thence on five miles further to Young's Point.

At Young's Point, a masonry lock and timber dam maintain navigation through Clear and Stoney lakes to Burleigh, a distance of about nine miles.

At Burleigh, a masonry lock of two lifts and timber dam maintain navigation through Lovesick lake, about two miles, to Lovesick.

At Buckhorn, a masonry lock and new concrete dam maintain navigation for about 16½ miles through Buckhorn and Pigeon lakes to Bobcaygeon, 135 miles from Trenton.

At Bobcaygeon, a masonry lock and two dams, one being recently rebuilt of concrete and the other a timber one, maintain navigation through Sturgeon lake and Fenelon river, a distance of about 14½ miles to Fenelon Falls.

At Fenelon Falls is a short canal, a masonry lock of two lifts and a timber dam which maintain navigation across Cameron lakes to Rosedale, a distance of about $3\frac{1}{2}$ miles, to a new concrete lock of the same dimensions as those on the Ontario-Rice Lake Division. This new lock will be placed in commission in the spring of 1910.

At Rosedale, the new concrete lock, and the dam which will be built in the summer of 1910 will maintain navigation on Balsam lake, the summit level of the canal, which extends from Rosedale to the hydraulic lock at Kirkfield, a distance of twelve miles; half of this distance is through a canal connecting Balsam Lake with the lock, which is about 165 miles from Trenton.

At Rosedale, there is at present an old wooden lock and dam which maintain navigation on the summit level, the route being about a mile longer than via the new lock.

At the Kirkfield hydraulic lock is a drop from the summit level of 50.44 feet. From this point to Gamebridge on Lake Simcoe, 178 miles from Trenton, the route consists of canal and river reaches maintained by damming the Talbot river. There are five new concrete locks numbered 1, 2, 3, 4 and 5, with concrete dams at Nos. 1, 2 and 3.

From Cooks bay on Lake Simcoe, 28½ miles from Gamebridge on the main line, the Holland river is being improved for six feet navigation, so as to afford communication with Newmarket 13½ miles from the lake, or 220 miles from Trenton.

The following is a list of locks now in use, with their dimensions, in order of location, from Hastings to Gamebridge on Lake Simcoe.

	Length between Hollow Quoins.	Width.	Depth on Sill.	Lift.
	Ft.	Ft.	Ft.	Ft.
1 Lock at Hastings.....	134	33	6	9
1 " at Peterborough.....	134	33	6	9
1 " No. 6, Peterborough—Lakefield Division.	142	33	6	12
1 " at Peterborough, hydraulic lift lock No. 1.....	140	33	6	65
1 " No. 5, Peterborough—Lakefield Division.	142	33	6	14
1 " No. 4, " " "	142	33	6	12
1 " No. 3, " " "	142	33	6	12
1 " No. 2, " " "	142	33	6	10
1 " No. 1, " " "	142	33	6	16
1 " at Young's Point.....	134	33	6	6
2 " at Burleigh, each 11½ feet. { Upper Lower	134 150	33	6	23
1 " at Lovesick.....	134	33	6	4
1 " at Buckhorn.....	134	33	6	9
1 " at Bobcaygeon.....	134	33	6	7
2 " at Fenelon Falls, each 12 feet..... { Upper Lower	134 150	33	6	24
1 " at Rosedale.....	175	33	8 4 in.	4
1 " at Kirkfield, hydraulic lift lock No. 2.....	140	33	6	50-44
1 " No. 1, Simcoe—Balsam Lake Division.....	142	33	6	21
1 " No. 2, " " "	142	33	6	14
1 " No. 3, " " "	142	33	6	14
1 " No. 4, " " "	142	33	6	14
1 " No. 5, " " "	142	33	6	11
24 1 " at Lindsay, Scugog Branch.....	142	33	6	6·5

ST. PETER'S CANAL, CAPE BRETON.

Length of canal.	About 2,400 feet.
Breadth at water line.	55 feet.
Lock.	1 tidal lock, 4 pairs of gates.
Dimensions.	200 feet by 48 feet.
Depth of water on sills.	18 feet at lowest water.
Depth through canal.	19 feet.
Extreme rise and fall of tide in St. Peter's bay	4 "

This canal connects St. Peter's bay on the southern side of Cape Breton, Nova Scotia, with the Bras d'Or lakes. It crosses an isthumus half a mile in width, and gives access from the Atlantic.

PART VIII

RAILWAY SUBSIDIES

RAILWAY SUBSIDY ACTS PASSED IN EACH YEAR SINCE 1882.

By the Acts of Parliament below specified, authority has been placed in the hands of the Governor in Council to grant, upon certain conditions, aid towards the construction of various lines of railway throughout the Dominion, as follows, namely :—

By the Acts of 45 Vic., cap. 14, 1882 (*Assented to 17th May, 1882*) :—

1. For a railway from Gravenhurst to Callander, both in the province of Ontario, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole \$660,000
2. For a railway from St. Raymond to Lake St. John, both in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 384,000
3. For a railway from a point on the Intercolonial Railway at Rivière du Loup or Rivière Ouelle, in the province of Quebec, or between them, to Edmundston, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 240,000
4. For a railway from Oxford to New Glasgow, both in the province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 224,000

"The said subsidies to be granted to such companies as shall be approved by the Governor in Council as having established, to his satisfaction, their ability to complete the said railways respectively, within a reasonable time, to be fixed by Order in Council, and according to descriptions and specifications to be approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in an agreement to be made by the company with the Government, and which the Government is empowered to make, and to be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each ten miles of railway, proportionate to the value of the portion so completed in comparison with the whole work undertaken, such proportion to be established by the report of the said Minister; provided always, that the granting of such bonuses or subsidies shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting therewith, as the Governor in Council may determine."

By the special Act 45 Vic., cap. 55, 1882 (*Assented to 17th May, 1882*) :—

5. A subsidy authorized in favour of "The Chignecto Marine Transport Railway Company," provided that they construct and thereafter maintain and operate a ship railway, to be approved by the Government, across the Isthmus of Chignecto, from the Gulf of St. Lawrence to the Bay of Fundy, per year, for twenty-five years. \$150,000

By the Act 46 Vic., cap. 25, 1883 (*Assented to 25th May, 1883*) :—

6. To the Baie des Chaleurs Railway Company, for 100 miles of their railway, from Métapédia, on the Intercolonial Railway, to Paspébiac, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 320,000

9-10 EDWARD VII., A. 1910

7. To the Caraquet Railway Company, for 36 miles of their railway, from a point near Bathurst to Caraquet, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$115,200
 8. To the Gatineau Valley Railway Company, for the first 50-mile section of their railway, from Hull station, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.. 160,000
 9. To the Great American and European Short Line Railway Company, for 80 miles of their railway, from Canso to Louisburg or Sydney, in the province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 256,000
 10. To the International Railway Company, for 49 miles of their railway, from Sherbrooke, in the province of Quebec, to the international boundary line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 156,800
 11. To the Northern and Western Railway Company, for 32 miles of their railway, from the Intercolonial Railway, near the Miramichi, to Moran's, near Demphy village, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.. 102,400
 12. To the Montreal and Western Railway Company, for the first 50-mile section of their railway, out of St. Jérôme, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 160,000
 13. To the Napanee, Tamworth and Quebec Railway Company, for 28 miles of their railway, from Napanee to Tamworth, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 89,600
 14. To the Quebec and Lake St. John Railway Company, for 25 miles of their railway, from St. Raymond to Lake St. John, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 80,000
- In addition to the subsidy granted by the Act forty-fifth Victoria, chapter fourteen.
15. For a railway from the International Railway at Petitcodiac to Havelock Corner, in the province of New Brunswick, 12 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
 16. For a railway from Gravenhurst to Callander, 110 miles, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole..... 660,000
- In addition to the subsidy granted by the Act forty-fifth Victoria, chapter fourteen.

"The nine subsidies first mentioned to be granted to the companies hereinbefore named respectively; and the two subsidies last mentioned to be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to complete the said railways, respectively; and all the eleven lines above mentioned, and also the lines of railway in respect of which it is provided by the Act of forty-fifth Victoria, chapter fourteen, that subsidies may be granted, shall be commenced within two years from the first day of July next, and completed within a reasonable time, not to exceed four years from and after the passing of this Act, to be fixed by Order in Council, and according to descriptions and specifications to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made by each company with the Government, and which the Government is empowered to make; and all the said subsidies authorized by this Act, respectively, to be paid out of the Consolidated Revenue Fund of Canada by instalments, on the completion of each section of not less than ten miles of railway, proportionate to the value of the portion so completed in comparison with the whole work undertaken, to be established by the report of the said Minister; Provided always, that the granting of such subsidies shall be subject to such conditions for securing such running powers

SESSIONAL PAPER No. 20

or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized as the Governor in Council may determine."

By the special Act 46 Vic., cap. 26, 1883 (*Assented to 25th May, 1883*):—

- 17.** An advance authorized in favour of the "St. John Bridge and Railway Extension Company," to enable them to build a railway bridge across the River St. John, N.B., with railway connection with the Intercolonial, such advance to be secured by a mortgage on their entire property, not to exceed 80 per cent of the expenditure on the work, nor a total sum of.....\$ 500,000

By the Act 47 Vic., cap. 8, 1884 (*Assented to 19th April, 1884*):—

- 18.** To the Government of the province of Quebec, in consideration of their having constructed the railway from Quebec to Ottawa, forming a connecting line between the Atlantic and Pacific coasts via the Intercolonial and Canadian Pacific Railways, and being as such a work of national and not merely provincial utility, a subsidy not exceeding \$6,000 per mile for the portion between Quebec and Montreal, 159 miles, nor exceeding in the whole..... 954,000
- 19.** And for the portion between Montreal and Ottawa, 120 miles, \$12,000 per mile, nor exceeding in the whole.....1,440,000
- 20.** For the construction of a line of railway connecting Montreal with the harbours of St. John and Halifax by the shortest and best practicable route, after the report of competent engineers, a subsidy not exceeding \$170,000 per annum, for fifteen years, or a guarantee of a like sum for a like period as interest on bonds of the company undertaking the work.
- 21.** For the construction of a line of railway from Oxford station, on the Intercolonial Railway, to Sydney or Louisburg, a subsidy not exceeding \$30,000 per annum for fifteen years or a guarantee of a like sum for a like period as interest on the bonds of the company undertaking the work, in addition to the subsidies previously granted, and also a lease or transfer to such company of the Eastern Extension Railway, from New Glasgow to Canso, with its present equipment.
- 22.** To the Quebec Central Railway Company, for a line of railway from Beauce Junction to the international boundary line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 211,200
- 23.** For the extension of the Canadian Pacific Railway, from its terminus at St. Martin's Junction, near Montreal, or some other point on the Canadian Pacific Railway, to the harbour of Quebec, in such manner as may be approved by the Governor in Council, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole..... 960,000
- 24.** To the Irondale, Bancroft and Ottawa Railway Company, for a line of railway from the Victoria branch of the Midland Railway to the village of Bancroft, in the township of Dungannon, county of Hastings, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000
- 25.** To the Pontiac Pacific Junction Railway, for a line of railway from Hull or Aylmer to Pembroke, provided the Ottawa River is crossed at some point not east of Lapasse, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 272,000
- 26.** To the Gatineau Railway Company, for a line of railway from Kazuabazua to Le Désert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000
- 27.** To the Napanee, Tamworth and Quebec Railway Company, for a line of railway from Tamworth Bogart and Bridgewater, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 70,400

28.	To the Montreal and Western Railway Company, for a line of railway from the end of the line subsidized in the now last session of Parliament, towards Le Désert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$160,000
29.	To the Northern and Western Railway Company, for a line of railway from Fredericton to the Miramichi River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (instead of the subsidy proposed in 1883).....	128,000
30.	To the Erie and Huron Railway Company, for a line of railway from Wallaceburg to Sarnia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
31.	To the Ontario and Pacific Railway Company, for a line of railway from Cornwall to Perth, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	262,400
32.	To the Kingston and Pembroke Railway Company, for a line of railway from Mississippi to Renfrew, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000
33.	To the Great Northern Railway Company, for that portion of their railway between St. Jérôme and New Glasgow, in the county of Terrebonne, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	32,000
34.	For a line of railway and bridge between the Jacques Cartier Union Railway Junction with the Canadian Pacific Railway and St. Martin's Junction connecting the Jacques Cartier Union Railway with the North Shore Railway proper, a subsidy not exceeding in the whole.....	200,000
35.	For a line of railway from Richibucto to St. Louis, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
36.	For a line of railway from Hopewell to Alma, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	51,200
37.	For a line of railway from St. Andrew's to Lachute, in the county of Argenteuil, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
38.	For a line of railway from the Grand Piles, on the River St. Maurice, to Lake Edward, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	217,600
39.	For a line of railway from Annapolis to Digby, in the province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	64,000
40.	For a line of the Central Railway, from the head of Grand Lake to the Intercolonial Railway between Sussex and St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	128,000
41.	To the Caraquet Railway Company, for the extension of their line of railway from Caraquet to Shippegan Harbour, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	76,800
42.	For a branch of the Intercolonial Railway, from Metapediac eastward towards Paspebiac, twenty miles, in the province of Quebec, a sum not exceeding in the whole.....	300,000
43.	For a branch of the Intercolonial Railway, from Derby Station to Indian-town, fourteen miles, a sum not exceeding in the whole.....	140,000

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall be granted to such companies, respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established, to his satisfaction, their ability to construct and complete the said railways respectively. All the lines for the construction of which subsidies are

SESSIONAL PAPER No. 20

granted shall be commenced within two years from the first day of July next and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, except the line mentioned in the fourth section of this Act,* which shall be commenced within one year, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister. The subsidies to the province of Quebec shall be capitalized, and the interest shall be payable at such time and in such manner as the Government of Canada shall agree upon with the Government of the said province. The two subsidies last mentioned in the list are for works to be constructed by the Government of Canada.

"Provided, always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council may determine."

By the special Act 47 Vic., cap. 6, 1884 (*Assented to 19th April, 1884*):

44. Relating to an agreement with the province of British Columbia, authority was given, *inter alia*, for the grant of a subsidy to the "Esquimalt and Nanaimo Railway Company" in aid of the construction of a line of railway and telegraph between the points named; such subsidy to be in lands *en bloc* on Vancouver Island, the boundaries being fixed by the Act, and in money..... \$750,000

By the Act 48-49 Vic., cap. 59, 1885 (*Assented to 20th July, 1885*):

45. To the Ottawa, Waddington and New York Railway and Bridge Company, for a line of railway from Ottawa to Waddington, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 166,400
46. To the New Brunswick and Prince Edward Island Railway Company, for a line of railway from Sackville to the Straits of Northumberland, at or near Cape Tormentine, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 118,400
47. To the Montreal and Sorel Railway Company, for a line of railway from St. Lambert to Sorel, a subsidy not exceeding \$1,600 per mile, nor exceeding in the whole..... 72,000
48. To the Brockville, Westport and Sault Ste. Marie Railway Company, for a line of railway from Brockville to Westport, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 128,000
49. To the Quebec and Lake St. John Railway Company, for a line of railway from its junction on the North Shore Railway to St. Raymond, upon condition of the company extending their road to a point 50 miles north of St. Raymond, a subsidy not exceeding \$3,200 per mile nor exceeding in the whole..... 96,000
50. To the Northern and Western Railway Company, for a line of railway from the northern end of the 40 miles subsidized between Fredericton and the Miramichi River by 47 Victoria, chapter 8, to Boiestown, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 19,200

* The extension of the Canadian Pacific Railway from its terminus at St. Martin's Junction, or some other point on the said railway to the harbour of Quebec.

9-10 EDWARD VII., A. 1910

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|---|----------|
| 51. To the Montreal and Champlain Junction Railway Company, for a line of railway from Brosseau's to Dundee, a subsidy not exceeding \$500 per mile, nor exceeding in the whole | \$30,000 |
| 52. To the Thunder Bay Colonization Railway Company, for a line of railway from the Murillo station of the Canadian Pacific Railway to the east end of Whitefish Lake, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole | 92,000 |
| 53. To the Central Ontario Railway Company, for a line of railway from Coe Hill or Rathbun, to Bancroft, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole | 64,000 |
| 54. To the Belleville and North Hastings Railway Company, for a line of railway from the village of Madoc to the junction with the Central Ontario Railway at Eldorado, a subsidy not exceeding \$1,500 per mile, nor exceeding in the whole | 10,500 |
| 55. For a line of railway from Long Sault to the foot of Lake Temiscamingue, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole | 25,600 |
| 56. For a line of railway from a point on the Canada Southern Railway near Comber, to Lake Erie, at or near the village of Leamington, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole | 44,800 |
| 57. To the Napanee, Tamworth and Quebec Railway Company, for a line of railway from Tamworth towards Bogart and Bridgewater, 16 miles, in lieu of the subsidy granted by 47 Vic., chap. 8, a subsidy of | 70,000 |
| 58. To the Gatineau Railway Company, for a line of railway from Hull station towards Le Désert, a distance of 62 miles, in lieu of the subsidies granted by 46 Vic., chap. 25, and 47 Vic., chap. 8, a subsidy of | 320,000 |
| 59. For a line of railway from the Grand Piles, on the River St. Maurice, to its junction with Lake St. John Railway, a distance of about 50 miles, in lieu of the subsidy granted by 47 Vic., chap. 8, for a line of railway from the Grand Piles, on the River St. Maurice, to Lake Edward, a subsidy of | 217,600 |
| 60. To the Canada Atlantic Railway Company, for a line of railway from Valleyfield to a point one and a half miles west of Johnston's, a subsidy not exceeding \$1,600 per mile, and from one and a half miles west of Johnston's to Lacolle; also from the present terminus at Ottawa, to the Chaudiere Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole | 96,000 |
| 61. For a line of railway from Indiantown via the Miramichi Valley, to its junction with the Northern and Western Railway at or near Boiestown, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. | 140,800 |

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall be granted to such companies, respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways, respectively. All the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council; and shall also be constructed according to descriptions, specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location, also, of every line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister.

SESSIONAL PAPER No. 20

"Provided always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connected with those so subsidized, as the Governor in Council may determine."

By the Act 48-49 Vic., cap. 58, 1885 (*Assented to 20th July, 1885*):—

62. For a railway from a point on the Intercolonial Railway at Rivière du Loup or Rivière Ouelle, in the province of Quebec, to Edmundston, in the province of New Brunswick, a subsidy not exceeding two thousand eight hundred dollars per mile for seventy-five miles, and six thousand dollars per mile for eight miles, nor exceeding in the whole two hundred and fifty-eight thousand dollars; the said subsidy to be in addition to the subsidy authorized to be granted in aid of the construction of the said railway by the Act forty-fifth Victoria, chapter fourteen, and constituting with the subsidy so authorized, a subsidy not exceeding in the whole four hundred and ninety-eight thousand dollars, and to be granted for the said railway upon the terms and conditions specified in the said Act, and payable out of the Consolidated Revenue Fund of Canada; and for the purpose of incorporating the persons undertaking the construction of the said railway and those who shall be associated with them in the undertaking, the Governor may grant to them, under such corporate name as he shall deem expedient, a charter conferring upon them the franchises, privileges and powers requisite for the said purposes, which shall be similar to such of the franchises, privileges and powers granted to railway companies during the present session as the Governor shall deem most useful or appropriate to the said undertaking; and such charter being published in the *Canada Gazette*, with any Order or Orders in Council relating to it, shall have force and effect as if it were an Act of the Parliament of Canada.
63. For a line of railway from the south bank of the St. Lawrence river, opposite or near Montreal, to the harbours of St. Andrew's, St. John and Halifax, via Sherbrooke, Moosehead Lake, Mattawamkeag, Harvey, Fredericton and Salisbury, a subsidy not exceeding eighty thousand dollars per annum for twenty years, forming in the whole, together with the subsidy authorized by the Act forty-seventh Victoria, chapter eight, for a line of railway connecting Montreal with the said harbours of St. John and Halifax by the shortest and best practicable route, which the line above described is found to be, a subsidy not exceeding two hundred and fifty thousand dollars per annum, the whole of which shall be paid in aid of the construction of such a line of railway for a period of twenty years, or a guarantee bond of a like sum for a like period as interest on the bonds of the company undertaking the work; the said subsidy to be so granted upon the terms and conditions of and payable out of the Consolidated Revenue Fund in the manner specified in the said last mentioned Act in respect of the subsidy thereby authorized in aid of the said line of railway.
64. The Governor in Council may grant a further subsidy as an aid towards procuring free access as hereinafter described for the trains and traffic of the Canadian Pacific Railway Company from St. Martin's Junction, near Montreal, or from some other point on their railway to be selected by the said company, to the harbour of Quebec, in such a manner as shall be approved by the Governor in Council, that is to say: an additional subsidy not exceeding three hundred and forty thousand dollars, constituting, together with the subsidy authorized by the said last mentioned Act, to aid in procuring the extension of

the Canadian Pacific Railway to Quebec, and the subsidy also thereby authorized to aid in constructing a line connecting the Canadian Pacific Railway at the Jacques Cartier Union Junction with the North Shore Railway proper (which subsidies shall be applicable to the said first mentioned purpose) a sum not exceeding in the whole the sum of one million five hundred thousand dollars, payable out of the Consolidated Revenue Fund of Canada.

The said Act further provided as follows in relation to this matter:—

“ If it should be expedient so to do in order to facilitate such access, the Governor in Council may acquire the North Shore Railway, and may apply the said sum of one million five hundred thousand dollars, or any part thereof, in aid of such acquisition and upon such acquisition may transfer and convey or lease the said railway to the Canadian Pacific Railway Company, subject to such obligation as the Government shall have assumed in acquiring it.”

By the Act 49 Vic., cap. 10, 1886 (*Assented to 2nd June, 1886*):—

- | | | |
|------------|--|-----------|
| 65. | For a railway from a point at or near Moncton, to Buctouche, in the province of New Brunswick, thirty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | \$ 96,000 |
| 66. | For a railway from Ingersoll via London to Chatham, in the province of Ontario, eighty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 256,000 |
| 67. | To the Northern and Western Railway Company, for ten miles of their railway, intervening between the termini of the portions of their railway for which subsidies are already granted, the one from Fredericton and the other from Indian town, and an extension of two miles down to deep water at Chatham, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 32,000 |
| 68. | To the Caraquet Railway Company, for ten miles of their railway, from the end of the present subsidized portion at Lower Caraquet to Shippegan, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 32,000 |
| 69. | To the Lake Erie, Essex and Detroit River Railway Company, for thirty-seven miles of their railway, from Windsor to Leamington, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 118,400 |
| 70. | To the Thunder Bay Colonization Railway Company, for fifty-six miles of their railway, from the end of the present subsidized section to a point near Crooked Lake, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 179,200 |
| 71. | To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the village of Parry Sound to the village of Sundridge, on the line of the Northern Pacific Junction Railway, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 128,000 |
| 72. | For a railway from a point at or near New Glasgow or St. Lin, to or near to Montcalm, in the province of Quebec, eighteen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 57,600 |
| 73. | For a railway from Hereford to the International Railway, in the township of Eaton, in the province of Quebec, thirty-four miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.. | 108,800 |
| 74. | For a railway from St. Félix to Lake Maskinongé, parish of St. Gabriel in the province of Quebec, ten miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 32,000 |
| 75. | For a railway from Glenannan to Wingham, in the province of Ontario, five miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 16,000 |

SESSIONAL PAPER No. 20

- 76.** For a railway from a point at or near the McCann Station, on the Intercolonial Railway, to the Joggins, on Cumberland Basin, in the province of Nova Scotia, twelve miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$ 33,400
- 77.** For a railway from L'Assomption to L'Épiphanie, in the province of Quebec, three miles and a half, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 11,200
- 78.** To the Montreal and Western Railway Company, for seventy miles of their railway from St. Jérôme, north-westerly towards Désert, in the province of Quebec, a subsidy of \$5,161 per mile, in lieu of the subsidies granted by 46 Vic., chap. 25, and 47 Vic., chap. 8, not exceeding in the whole 361,270
- 79.** For a railway from St. Andrew's to the Canadian Pacific Railway at or at any point east of the town of Lachute, in the county of Argenteuil, in the province of Quebec, seven miles, in lieu of the subsidy granted by 47 Vic., chap. 8, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 22,400
- 80.** To the Canada Atlantic Railway Company, for twelve miles of their railway from Clark's Island to Valleyfield, and from Lacolle, in the province of Quebec, to the international boundary, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 81.** For a railway from Truro to Newport, in the province of Nova Scotia, forty-nine miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 156,800
- 82.** To the Quebec and Lake St. John Railway Company, for ninety-five miles of their railway, from a point fifty miles north of St. Raymond to Lake St. John, in the province of Quebec, a subsidy not exceeding \$1,961 per mile, nor exceeding in the whole (in addition to the subsidy granted by 45 Victoria, chapter 14, and 46 Victoria, chapter 25, of \$3,200 per mile)..... 186,295
- 83.** To the Cap Rouge and St. Lawrence Railway Company, for twelve miles of their railway from Lorette via Cap Rouge to Quebec, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 84.** For the construction of wharfs and landing stages on the line of the railway from Long Sault to the foot of Lake Temiscamingue, a subsidy of..... 6,000
- 85.** To the Gananoque, Perth and James Bay Railway Company, seventeen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 54,400
- 86.** For a railway from St. Eustache to St. Placide, county of Two Mountains, eighteen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 57,600
- 87.** For a railway from a point on the Intercolonial Railway through the Stewiacke Valley, on the line which will afford facilities of communication with the Iron Mines, Spring Side, Upper Stewiacke and Musquodoboit settlements, twenty-five miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 80,000
- 88.** For a railway from Yamaska to the River St. Francis, in the province of Quebec, ten miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 32,000
- 89.** For a railway from Perth Centre station, on the New Brunswick Railway, to a point near Plaister Rock Island, in the province of New Brunswick, twenty-eight miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 89,600
- 90.** For a railway from Fredericton to the village of Prince William, in the province of New Brunswick, twenty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400

9-10 EDWARD VII., A. 1910

- 91.** For a railway from a point on the Intercolonial Railway near Newcastle or via Douglastown to a point on the River Miramichi, opposite the town of Chatham, in the province of New Brunswick, six miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. \$19,200
- 92.** For a railway from a point on the Canadian Pacific Railway to Eganville, in the province of Ontario, twenty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 70,400
- 93.** To the Belleville and North Hastings Railway Company, for seven miles of their railway, from the village of Madoc to the junction with the Central Ontario Railway at Eldorado, in the province of Ontario, a subsidy (in addition to the subsidy of \$1,500 per mile granted by 48-49 Victoria, chapter 59), not exceeding \$1,700 per mile, nor exceeding in the whole. 11,900
- 94.** To the Napanee, Tamworth and Quebec Railway Company, for eighteen miles of their railway from Tamworth to Tweed, in lieu of the subsidy granted by 48-49 Victoria, chapter 59, a subsidy of. 70,000
- 95.** To the Albert Railway Company, for their railway from Salisbury to Hopewell, in the province of New Brunswick, which is a feeder to the Intercolonial Railway, in the form of a loan, repayable at such time and secured in such manner as the Governor in Council determines, a subsidy of. 15,000

"The subsidies hereinbefore mentioned as to be granted to the companies named for that purpose shall be granted to such companies respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established, to his satisfaction, their ability to construct and complete the said railways respectively. All the lines for the construction of which subsidies have been granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall be so constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in the agreement to be made in each case by the company to the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council, and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister: Provided always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements, and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council may determine."

By section 2 of this Act authority was given for the grant of a charter by the Governor in Council for the purpose of constructing a railway from Long Sault to the foot of Lake Temiscamingue.

By the Act 50-51 Vic., cap. 24, 1887 (*Assented to 23rd June, 1887*).

- 96.** To the St. Catharines and Niagara Railway Company, for twelve miles of their railway from the city of St. Catharines to the bridge over the Niagara River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. \$ 38,400
- 97.** To the Vaudreuil and Prescott Railway Company, for thirty miles of their railway from Vaudreuil towards Hawkesbury, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 96,000
- 98.** To the Richmond Hill Junction Railway Company, for five miles of their railway from Richmond Hill Junction, on the Northern Railway of Canada, to Richmond Hill village, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 16,000

SESSIONAL PAPER No. 20

99. To the Drummond County Railway Company, for thirty miles of their railway from Drummondville towards Nicolet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
100. To the Jogzins Railway Company, for one and a quarter miles of their railway extending from the southern end of the portion subsidized by the Act 49 Victoria, chapter 10, to the wharfs, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	4,000
101. To the Moncton and Buctouche Railway Company, for two miles of their railway from the west end of the portion subsidized by the Act 49 Victoria, chapter 10, to Moncton, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	6,400
102. To the Beaulharnois Junction Railway Company, for thirty miles of their railway from St. Martin's towards St. Anicet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
103. To the Harvey Branch Railway Company, for three miles of their railway from the southern terminus of the Albert Railway to Harvey Bank, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	9,600
104. To the Brantford, Waterloo and Lake Erie Railway Company, for eighteen miles of their railway from the town of Brantford to the village of Hagarsville or the village of Waterford, or some intermediate point on the Canada Southern Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	57,600
105. To the Guelph Junction Railway Company, for sixteen miles of their railway from its junction with the Canadian Pacific Railway to the town of Guelph, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	51,200
106. To the Massawippi Railway Company, for ten miles of their railway from a point on the Atlantic and North-western Railway near the village of Magog, to Ayer's Flat station, on the Massawippi Valley Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	32,000
107. To the Napanee, Tamworth and Quebec Railway Company, for four miles of their railway from the north end of the section subsidized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter 59, to Tweed, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	12,800
108. To the Dominion Lime Company, for seven miles of their railway from a point on the Quebec Central Railway, in the township of Dudswell, to the Dudswell Lime Company's quarries, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
109. To the South Norfolk Railway Company, for seventeen miles of their railway from Port Rowan to the town of Simcoe, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	54,400
110. To the Jacques Cartier Union Railway Company, extending and completing their railway, a subsidy of.....	20,000
111. For a line of railway from Mount Forest to Walkerton, twenty-four miles in length, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	76,800
112. To the Oshawa Railway and Navigation Company, for seven miles of their railway from Port Oshawa towards Raglan, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
113. To the Saguenay and Lake St. John Railway Company, for thirty miles of their railway from Lake St. John towards Chicoutimi, or from Chicoutimi towards Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000

9-10 EDWARD VII., A. 1910

114.	To the Great Eastern Railway Company, for thirty miles of their railway from the River St. Francis to the Arthabaska Railway, at St. Grégoire station, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$96,000
115.	To the Ontario and Pacific Railway Company, for six miles of their railway from the northern end of the portion subsidized by the Act 47 Victoria, chapter 8, to the town of Perth, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	19,200
116.	To the Caraqueet Railway Company, for seven miles of their railway from Lower Caraqueet to Shippegan, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding in the whole..	32,000
117.	To the St. Lawrence and Lower Laurentian and Saguenay Railway Company, for the section of this railway from Grand Piles, on the St. Maurice River, to its junction with the Quebec and Lake St. John Railway, in lieu of the subsidy granted by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter 59, for a line of railway from Grand Piles, on the St. Maurice River, to its junction with the Lake St. John Railway, a distance of about fifty miles, a subsidy of.....	217,600
118.	To the St. John Valley and River du Loup Railway Company, for twenty-two miles of their railway from the village of Prince William towards the town of Woodstock, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	70,400
119.	To the Lake Temiscamingue Railway Company, for four short sections of railway, in all about two miles in length, to overcome the rapids of the Ottawa River, known as "La Mi-Charge," "La Cave," "Les Erables," and "La Montagne," and for the construction of wharfs and landing stages at these rapids, to connect the Canadian Pacific Railway at Mattawa with Lake Temiscamingue by steamboats, railways and other works (in lieu of a portion two miles in length, out of the eight miles of railway subsidized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter 59, under which about six miles of railway have already been built from the foot of Long Sault proper to the foot of Lake Temiscamingue, and in lieu also of the subsidy granted by the Act 49 Victoria, chapter 10), a subsidy of.....	12,400
120.	To the Carillon and Grenville Railway Company, for twelve miles of their railway from St. Eustache to Sault au Récollet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	38,400
121.	To the Minudie Branch Railway Company, for five and a half miles of their railway from its junction with the Joggins Railway, near the River Hébert railway bridge, to the village of Minudie, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	17,600
122.	To the Lake Temiscamingue Colonization and Railway Company, for ten and a half miles of their railway from the Long Sault to Lake Kippewa, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	33,600
123.	To the Leamington and St. Clair Railway Company, for two miles of their railway from the north end of the section subsidized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter 59, to the village of Comber, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	6,400
124.	To the Cumberland Railway and Coal Company for fourteen miles of their railway from a point on the Spring Hill and Parrsboro' Railway, near Spring Hill, to a point on the railway between Oxford and New Glasgow, near Oxford village, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	44,800

SESSIONAL PAPER No. 20

125. To the Montreal and Champlain Junction Railway Company, a subsidy of.....	\$ 64,000
126. To the Quebec and Lake St. John Railway Company, for nine miles of their railway, the distance which the previous subsidies granted are short of covering from the city of Quebec to Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole....	28,800
127. To the Temiscouata Railway Company, for thirty miles of a branch of their railway from Edmundston towards the St. Francis River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..	96,000
128. To the Cornwallis Valley Railway Company, for thirteen miles of their railway from Kentville to Kingsport, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	41,600
129. To the Nova Scotia Central Railway Company, for thirty-four miles of their railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	108,800
130. To the Tobique Valley Railway Company, for fourteen miles of their railway from Perth Centre station towards Plaister Rock Island, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, for a railway from Perth Centre station, on the New Brunswick Railway, to a point near Plaister Rock Island, a subsidy of.....	89,600
131. For a railway from Woodstock towards Centreville, twenty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..	64,000
132. For a railway bridge over the St. Lawrence River, at Coteau Landing on the line of the Canada Atlantic Railway, a subsidy of fifteen per cent on the value of the structure, not to exceed.....	180,000
133. To the Lake Erie, Essex and Detroit River Railway Company, for twenty-seven miles of their railway, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding.....	118,400

"For the purpose of granting corporate powers to persons or companies undertaking the construction of railways or parts of railways, mentioned in the next preceding section, for the construction of which no corporate powers exist at the time of the passing of this Act, the Governor in Council may grant to them, under such corporate name as he shall deem expedient, a charter conferring upon them the franchises, privileges and powers requisite for the said purposes, as the Governor in Council shall deem most useful or appropriate to the said undertaking; and such charter being published in the *Canada Gazette*, with any Order or Orders in Council relating to it, shall have force and effect as if it were an Act of the Parliament of Canada.

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall be granted to such companies respectively; the other subsidies, including subsidies granted for railways over a line extending beyond a point to which any company hereinbefore mentioned by name is authorized to construct their railway, shall be granted to such companies as shall be approved by the Governor in Council, as having established, to his satisfaction, their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council; and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon completion of the work subsidized, except as regards the subsidy for the bridge over the

9-10 EDWARD VII., A. 1910

St Lawrence River, upon which shall be paid fifteen per cent of the value of work done on monthly progress estimates, certified by the Chief Engineer, and upon the approval of the Minister of Railways and Canals.

"The granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

"Notwithstanding anything contained in the Act forty-fifth Victoria, chapter fourteen, or in the Act forty-sixth Victoria, chapter twenty-five, the balances of the sums granted for a railway from St. Raymond to Lake St. John and to the Quebec and Lake St. John Railway Company by the said Acts respectively, which have not yet been paid by the Government, may be paid at any time within one year from the passing of this Act, subject to the conditions in the said Act contained."

By the Act 51 Vic., cap. 3, 1888 (*Assented to 22nd May, 1888*):—

134. To the Ottawa and Parry Sound Railway Company, for 22 miles of their railway from a point on the Canadian Pacific Railway to Eganville, in lieu of the subsidy granted by 49 Victoria, chapter 10, for a railway from a point on the Canadian Pacific Railway to Eganville, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 70,400 00
135. To the Nova Scotia Central Railway Company, for 46 miles of their railway, in the province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	147,200 00
136. To the Montreal and Champlain Junction Railway Company, for 3 miles of their railway from the end of the present subsidized section, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	9,600 00
137. To the Massawippi Junction Railway Company, for their railway from a point on the Atlantic and North-west Railway, near the village of Magog, to Ayer's Flat station, on the Massawippi Valley Railway, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy of.....	32,000 00
138. To the Pontiac Pacific Junction Railway Company, for bridging the several channels of the Ottawa River at Culbute and west thereof, a subsidy of \$31,500, to be paid out monthly as the work progresses, upon the certificate of the Chief Engineer of Government railways, in the proportion which the value of the work executed bears to the value of the whole work undertaken, and for three miles of their railway extending from a point three miles east of Pembroke to Pembroke, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole \$9,600, provided that the entire work subsidized upon this railway shall be completed within four years from the passing of this Act, the subsidy granted by this Act not to exceed in the whole.....	41,100 00
139. To the Port Arthur, Duluth and Western Railway Company, for 84½ miles of their railway from Port Arthur towards Gun Flint Lake, in lieu of the subsidies granted by 48-49 Victoria, chapter 59, and 49 Victoria, chapter 10, for the construction of a railway from Murillo Station to Crooked Lake, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	271,200 00
140. To the Quebec and Lake St. John Railway Company, for 30 miles of their railway from Lake St. John towards Chicoutimi, or from Chicoutimi towards Lake St. John, being a transfer made at the request of the Saguenay and Lake St. John Railway Company of the subsidy granted to them by 50-51 Victoria, chapter 24, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	96,000 00

SESSIONAL PAPER No. 20

- 141.** To the Temiscouata Railway Company, for 20 miles of their branch railway from Edmundston towards the St. Francis River, in the province of Quebec, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy of..... \$100,000 00
- 142.** To the Quebec Central Railway Company, for the construction and completion of a line of railway from St. Francis Station to a point on the Atlantic and North-west Railway near Moose River, 90 miles, in lieu of the balance of the subsidy, unearned, granted by 47 Victoria, chapter 8, a subsidy not exceeding \$21,191.54 per annum for twenty years, or a guarantee of a like sum for a like period as interest on the bonds of the company, such annual subsidy for twenty years representing a grant in cash of 288,000 00
- 143.** To the Central Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 4,052 tons of used iron rails and fastenings, loaned to the St. Martin's and Upham Railway Company, now forming part of the Central Railway, which rails and fastenings stand in the Public Accounts as an asset for..... 83,612 54
- 144.** To the Elgin, Petitcodiac and Havelock Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 2,201 tons of used iron rails and fastenings loaned to the Elgin Branch Railway, now forming part of the Elgin, Petitcodiac and Havelock Railway, which rails and fastenings stand in the Public Accounts as an asset for 44,252 82
- 145.** To the Kent Northern Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 2,549 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 58,334 27
- 146.** To the Halifax Cotton Company of Nova Scotia, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 233 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 4,335 00
- 147.** To the Steel Company of Canada, in Nova Scotia, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 597 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 11,964 66
- 148.** To the Albert Railway Company of New Brunswick, a grant as subsidy (the section of road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 726 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 14,665 45

9-10 EDWARD VII., A. 1910

- 149.** To the Chatham Branch Railway of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 958 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... \$21,439 84

“ All the lines, for the construction of which subsidies are granted, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications, and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council; and also the said subsidies respectively, payable in cash, shall be payable out of the Consolidated Revenue Fund of Canada by instalments, on the completion to the satisfaction of the Minister of Railways and Canals of each section of the railway of not less than 10 miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon completion of the work subsidized.”

By the Act 52 Vic., chap. 3, 1889. (*Assented to 2nd May, 1889*):—

- 150.** To the Ontario and Pacific Railway Company, for a line of railway from Cornwall to Ottawa, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$172,400 00
- 151.** To the Ottawa and Gatineau Railway Company, for a line of railway from Hull station towards Le Désert, a distance of sixty-two miles, a subsidy not exceeding in the whole..... 320,000 00
- 152.** To the Cap Rouge and St. Lawrence Railway Company, for twelve miles of their railway, from Lorette via Cap Rouge to Quebec, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400 00
- 153.** To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the village of Parry Sound to the village of Sundridge, or some other point on the line of the Northern and Pacific Junction Railway, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 128,000 00
- 154.** For a railway from St. Andrew's to the Canadian Pacific Railway, at or at any point east of the town of Lachute, in the county of Argenteuil, in the province of Quebec, seven miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 22,400 00
- 155.** For a railway from Truro, or a point between Truro and Stewiacke, to Newport or to Windsor, in the province of Nova Scotia, forty-nine miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 156,800 00
- 156.** For a line of the Central Railway from the head of Grand Lake to the Intercolonial Railway, in the province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 128,000 00
- 157.** To the Albert Southern Railway Company, the balance remaining unpaid of the subsidy granted by the Act 47th Victoria, chapter 8, not exceeding in the whole 31,771 43
- 158.** To the Baie des Chaleurs Railway Company, the balance remaining unpaid of the subsidy mentioned in the Act 49th Victoria, chapter 17, not exceeding in the whole 244,500 00

SESSIONAL PAPER No. 20

159.	To the Irondale, Bancroft and Ottawa Railway Company, for a line of railway from the Victoria Branch of the Midland Railway to the village of Bancroft, in the county of Hastings, the balance remaining unpaid of the subsidy granted by the Act 47th Victoria, chapter 8, not exceeding in the whole.....	\$145,000 00
160.	To the Northern and Pacific Junction Railway Company, for a railway from Gravenhurst to Callander, the balance remaining unpaid of the subsidies granted by the Act 45th Victoria, chapter 14, and 46th Victoria, chapter 25, not exceeding in the whole..	35,000 00
161.	For a railway from some point on the Joggins Railway, near the Hébert River, to Young's Mills, in the province of Nova Scotia, a distance of five miles, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole	16,000 00
162.	To the St. Clair Frontier Tunnel Company, for the construction of a tunnel under the St. Clair River, from a point at or near Sarnia, to a point at or near Port Huron, a subsidy not exceeding in the whole.....	375,000 00
163.	To the Pontiac and Renfrew Railway Company, for six miles of their railway from the north bank of the Ottawa River, opposite Braeside, or from Bristol Iron Mines, to the Pontiac Pacific Junction Railway, near the Quyon River, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole.....	19,200 00
164.	To the Quebec, Montmorency and Charlevoix Railway Company, for thirty miles of their railway, from the east bank of the St. Charles River, to or near to Cap Tourmente, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole.....	96,000 00
165.	To the Fredericton and St. Mary's Bridge Company, for a bridge over the St. John River, at Fredericton, in the province of New Brunswick, a subsidy not exceeding in the whole.....	30,000 00
166.	To the Napanee, Tamworth and Quebec Railway Company, for seven miles of their railway, from a point at or near Yarker to a point at or near Harrowsmith, and to a company for three miles of railway from a point at or near Harrowsmith to a point at or near Sydenham, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole	32,000 00
167.	For a railway from a point near Sicamous, on the Canadian Pacific Railway, to a point on Lake Okanagan for fifty-one miles of such railway, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole	163,200 00
168.	To the Cornwallis Valley Railway Company, for one mile of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, to Kingsport, in the province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	3,200 00
169.	To the Lake Témiscamingue Colonization and Railway Company, for fifteen miles of their railway, from Mattawa station on the Canadian Pacific Railway, towards the Long Sault, or from the Long Sault towards the said Mattawa station, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000 00
170.	To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from a point on the Canadian Pacific Railway at or near Maskinongé or Louiseville, towards the parish of Saint-Michel des Saints, on the River Mattawin, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000 00

171.	To the Kingston, Smith's Falls and Ottawa Railway Company, for twenty miles of their railway, from the city of Kingston towards Smith's Falls, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	\$ 64,000 00
172.	To the South Ontario Pacific Railway Company, for forty-nine and one-half miles of their railway, from Woodstock to Hamilton, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	158,400 00
173.	For a railway from St. Césaire to St. Paul d'Abbotsford, in the province of Quebec, five miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	16,000 00
174.	To the Great Eastern Railway Company, for twenty miles of their railway, from the east end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Grégoire, towards the Chaudière Junction station on the Intercolonial Railway, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	64,000 00
175.	To the Drummond County Railway Company, for four and one-half miles of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, to Ball's Wharf, on the St. Lawrence River, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	14,400 00
176.	To the St. Catharines and Niagara Central Railway Company, for twenty miles of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Catharines, towards the city of Hamilton, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	64,000 00
177.	To the Quebec and Lake St. John Railway Company, for twenty miles of their railway, from the end of the section of thirty miles from Lake St. John towards Chicoutimi, subsidized by the Act 51 Victoria, chapter 3, towards Chicoutimi, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	64,000 00
178.	To the Grand Trunk, Georgian Bay and Lake Erie Railway Company, for fifteen miles of their railway, from the village of Tara or some point between Tara and Hepworth, to the town of Owen Sound, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	48,000 00
179.	To the Hereford Railway Company, for fifteen miles of their railway, from Cookshire to a junction with the Quebec Central Railway at Dudswell, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	48,000 00
180.	To the Massawippi Junction Railway Company, for fifteen miles of their railway, from Ayer's Flat to Coaticook, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	48,000 00
181.	To the Brockville, Westport and Sault Ste. Marie Railway Company, for twenty miles of their railway, from a point at or near Newboro', towards Palmer's Rapids, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	64,000 00
182.	To the Thousand Islands Railway Company, for four miles of their railway, from a point near the St. Lawrence River, in Gananoque village, to Gananoque Junction of the Grand Trunk Railway, and for thirteen miles of their railway, from Gananoque Junction of the Grand Trunk Railway to a junction with the Brockville, Westport and Sault Ste. Marie Railway, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	54,400 00

SESSIONAL PAPER No. 20

- 183.** For a railway from Cape Tourmente towards Murray Bay, twenty miles, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$64,000 00
- 184.** To the Amherstburg, Lake Shore and Blenheim Railway Company, for twenty miles of their railway, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 64,000 00

"So much of the subsidy of three thousand two hundred dollars per mile, which under the provisions of the Act forty-ninth Victoria, chapter seventeen, and of this Act, may be paid to the Baie des Chaleurs Railway Company in respect of the thirty miles of their railway, from the seventieth to the hundredth mile, eastward from Metapediac, shall be applicable to the section of the said railway, comprised between the fortieth and the seventieth mile thereof, eastward from Metapediac, instead of to the said first mentioned section of thirty miles, making six thousand four hundred dollars per mile applicable to the secondly mentioned section of thirty miles; but the foregoing provision shall be subject to the condition that the said company undertake to complete the thirty miles of their railway from the seventieth to the hundredth mile eastward from Metapediac within a reasonable time, not to exceed four years, to be fixed by Order in Council, and without any further subsidy from the Government of Canada, and that they deposit with the Minister of Railways and Canals, as security to the Crown that they will well and truly carry out their undertaking, their bonds to the amount of two hundred thousand dollars.

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized, except as respects the tunnel under the St. Clair River, in which case there shall be paid fifteen per cent of the value of work done on monthly progress estimates, certified by the Chief Engineer, and upon the approval of the Minister of Railways and Canals.

"The granting of such subsidies, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

"And for the removal of doubts it is hereby declared and enacted that the provision in the Act passed in the fifty-first year of Her Majesty's reign, and chaptered three, relating to the Pontiac Pacific Junction Railway Company, extended and extends the several subsidies in aid of the said company for four years from the passing of the said Act, that is to say, from the twenty-second day of May, one thousand eight hundred and eighty-eight."

By the Special Act, 52 Vic., cap. 5, 1889 (*Assented to 2nd May, 1889*):—

- 185.** In order to enable the Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company to complete their railway from Regina to some point on the South Saskatchewan River at or near Saskatoon, and thence northward to Prince Albert, the Governor in Council may enter into a contract with such company for the transport of men, supplies, materials and mails,

for twenty years, and may pay for such services during the said term, eighty thousand dollars per annum in manner following, that is to say:—the sum of fifty thousand dollars to be paid annually on the construction of the railway to a point at or near Saskatoon, such payment to be computed from the date of the completion of the railway to such point; and the remaining thirty thousand dollars annually on the extension of the railway to Prince Albert, such payment to be computed from the date of such last mentioned completion: Provided that if the second portion of the said railway is not built and operated to Prince Albert within two years after the completion of the railway to the South Saskatchewan as aforesaid, the payment of fifty thousand dollars shall cease until the whole railway is finished to Prince Albert.

By the Act 53 Vic., cap. 2, 1890 (*Assented to 16th May, 1890*):—

186.	To the Montreal and Ottawa Railway Company, for thirty miles of their railway, from the western end of the thirty-six miles subsidized by the Act 50-51 Victoria, chapter 24, towards Ottawa, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole.....	\$ 96,000
187.	To the Waterloo Junction Railway Company, for eleven miles of their railway, from Waterloo to Elmira, a subsidy not exceeding \$3,200 per mile, and not exceeding in the whole.....	35,200
188.	To the Northern and Pacific Junction Railway Company, for a railway from Gravenhurst to Callander, the balance remaining unpaid of the subsidies granted by the Acts 45 Victoria, chapter 14, and 46 Victoria, chapter 25, not exceeding in the whole...	600
189.	For a railway from Woodstock via London to Chatham, in the province of Ontario, thirty miles in lieu of the subsidy granted by the Act 19 Victoria, chapter 10, for a railway from Ingersoll via London to Chatham, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	256,000
190.	To the St. Catharines and Niagara Railway Company, for fourteen miles of their railway, from the end of the twenty miles subsidized by the Act 52 Victoria, chapter 3, to Hamilton, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	44,800
191.	To a railway from Ottawa to Morrisburg, fifty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole....	166,400
192.	To the Erie and Huron Railway Company, for twenty-two miles of their railway from Petrolia via Oil Springs to Dresden, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	70,400
193.	To the Brockville, Westport and Sault Ste. Marie Railway Company, for a railway from Brockville to Westport, the balance remaining unpaid of the subsidy granted by the Act 48-49 Victoria, chapter 59, not exceeding in the whole.....	83,000
194.	To the Manitoulin and North Shore Railway Company, for thirty miles of their railway from Little Current to the Algoma Branch of the Canadian Pacific Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
195.	To the Port Arthur, Duluth and Western Railway Company, for five miles of their railway, being a branch of the main line of railway to the Kakabeka Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	16,000
196.	To the Lake Erie and Detroit River Railway Company, for fifty miles of their railway, on a line to be fixed by the Governor in Council, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	160,000

SESSIONAL PAPER No. 20

197.	To the Lindsay, Bobcaygeon and Pontypool Railway Company, for sixteen miles of their railway, from Bobcaygeon to the Midland Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 51,200
198.	To the Kingston, Smith's Falls and Ottawa Railway Company, for thirty-six miles of their Railway, from the north-east end of the twenty miles subsidized by the Act 52 Victoria, chapter 3, to Smith's Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	115,200
199.	To the Ottawa and Parry Sound Railway Company, for thirty miles of their railway, from Eganville to Barry's Bay, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
200.	To the Belleville and Lake Nipissing Railway Company, for thirty miles of their railway, from Belleville to Tweed and thence to Bridgewater, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
201.	To the Cobourg, Northumberland and Pacific Railway Company, for thirty miles of their railway from Cobourg to the Ontario and Quebec Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
202.	To the St. Stephen and Milltown Railway Company, for three and a half miles of their railway, from the town of St. Stephen to the town of Milltown, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	11,200
203.	To the Woodstock and Centreville Railway Company, for six miles of their railway, from the western end of the twenty miles subsidized by the Act 50-51 Vic., chap. 24, to the International boundary between the province of New Brunswick and the state of Maine, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	19,200
204.	For a railway from a point at or near Fredericton, via Oromocto and Gagetown, to a point on the New Brunswick Railway west of Westfield station, for thirty miles thereof, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
205.	To the Central Railway Company of New Brunswick, for four and a half miles of their railway, the distance which the previous subsidy granted is short of covering, from the head of Grand Lake to the Intercolonial Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	14,400
206.	To the Montreal and Western Railway Company, for seventy miles of their railway, from St. Jérôme, north-westerly towards Désert, in the province of Quebec, in lieu of the subsidy granted by the Act 49 Vic., chap. 10, a subsidy not exceeding \$5,161 per mile, nor exceeding in the whole.....	361,270

" Provided, that the subsidy hereby granted to the Montreal and Western Company may be paid by instalments on the completion of each section of the railway as follows, that is to say :—

SECTIONS.	Approximate length in miles.
St. Jérôme to Shawbridge.....	8
Shawbridge to St. Sauveur.....	4
St. Sauveur to Ste. Adèle.....	6
Ste. Adèle to Lac à la Fourche.....	6
Lac à la Fourche to Ste. Agathe.....	6½
Ste. Agathe to St. Faustin.....	14
St. Faustin to St. Jovite.....	7½
St. Jovite to Summit Lake.....	8
Summit Lake to La Chute aux Iroquois.....	7
La Chute aux Iroquois towards Désert.....	3

9-10 EDWARD VII., A. 1910

"Such instalments to be proportionate to the value of the portions so completed in comparison with that of the whole work undertaken, to be established as aforesaid."

207. For seventy-five miles of the railway from Shelburne, in the county of Shelburne, and from Liverpool, in the county of Queen's towards Annapolis, in the province of Nova Scotia, to be so contracted for as to secure the construction to both Shelburne and Liverpool, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 240,000
208. To the Inverness and Richmond Railway Company, for fifty miles of their railway from Port Hawkesbury to Broadcove, a subsidy not exceeding \$1,000 per mile, nor exceeding in the whole....	50,000
209. To the International Railway Company, for a railway from Sherbrooke to the international boundary, the balance remaining unpaid of the subsidy granted by the Act 46 Vic., chapter 25, not exceeding in the whole.....	3,840
210. For completing the Montreal and Sorel Railway from St. Lambert to Sorel.....	40,000
211. To the Pontiac Pacific Junction Railway Company, for seven and a half miles of their railway, from Hull to Ayhner, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole....	24,000
212. To the Montreal and Lake Maskinongé Railway Company, for three and a half miles of their railway, the distance which the subsidy granted by the Act 49 Vic., chapter 10, is short of covering from St. Félix to Lake Maskinongé, in the parish of St. Gabriel, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	10,200
213. To the Great Eastern Railway Company, for a bridge over the Nicolet River, and also a bridge on the St. Francis River, a subsidy of 15 per cent on the value of the structure, not to exceed.....	37,500
214. To the Drummond County Railway Company, for twenty-four miles of their railway, from Drummondville to Ste. Rosalie, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	76,800
215. To the Great Northern Railway Company, for fifteen miles of their railway, from, at or near Montcalm to the Canadian Pacific Railway, between Joliette and St. Félix de Valois, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000
216. To the Lake Temiscamingue Colonization Railway Company, for twenty miles of their railway, from the northern end of the fifteen miles subsidized by the Act 52 Vic., chapter 3, to the Long Sault, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	64,000
217. To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from the northern end of the 15 miles subsidized by the Act 52 Victoria, chapter 3, towards the parish of St. Michel des Saints, on the River Mattawa, in the province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000
218. To the St. Lawrence and Adirondack Railway Company, for eighteen miles of their railway, from Valleyfield to Huntingdon, on the Montreal and Champlain Junction Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole....	57,600
219. To the Quebec Central Railway Company, for ninety miles of their railway, from St. Francis Station, on the Quebec Central Railway, to a point on the Atlantic and North-western Railway,	

SESSIONAL PAPER No. 20

	near Moose River, or from a point on the Quebec Central Railway between the Chaudière River and Tring Station, to a point on the International Railway at or near Lake Megantic, in lieu of the subsidy granted by the Act 51 Victoria, chapter 3, a subsidy not exceeding \$21,191.54 per annum for twenty years, or a guarantee of a like sum for a like period, as interest on the bonds of the company, such annual subsidy for twenty years representing a grant in cash of.....	\$288,000
220.	To the Quebec and Lake St. John Railway Company, for a railway bridge over the St. Charles River, to give access to the city of Quebec, a subsidy not to exceed in the whole \$30,000; also for twelve miles of their railway from Lorette via Charlesbourg to Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole \$38,400.....	68,400
221.	For a railway from Summerside to Richmond Bay, in the province of Prince Edward Island, three miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	9,600
222.	To the Columbia and Kootenay Railway Company, for thirty-five miles of their railway, from the outlet of Kootenay Lake to a point on the Columbia River as near as practicable to the junction of the Kootenay and Columbia Rivers, a subsidy not exceeding \$3,200 per mile, nor to exceed in the whole.....	112,000
223.	For a railway from a point on the Intercolonial Railway through the Stewiacke Valley on a line which will afford facilities of communication with the Iron Mines, Springside, Upper Stewiacke and Musquodoboit settlements, twenty-five miles, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	80,000
224.	For a railway from Fredericton to the village of Prince William in the province of New Brunswick, twenty-two miles, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	70,400
225.	To the St. John Valley and Rivière du Loup Railway Company, for twenty-two miles of their railway from the village of Prince William towards the town of Woodstock, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	70,400
226.	To the Témiscouata Railway Company, for sixteen miles of their railway, from the west end of the twenty miles of their branch railway from Edmundston, subsidized by the Act 51 Victoria, chapter 3, towards the St. Francis River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	51,200
227.	For a railway from the north end of the fourteen miles for which a subsidy was granted by the Act 50 and 51 Victoria, chapter 24, to the Tobique Valley Railway Company, from Perth Centre towards Plaister Rock Island, eleven miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	35,200
228.	To the Orford Mountain Railway Company, for thirty-one miles of their railway, between Eastman and Kingsbury, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	99,200
229.	For a railway from Lachine Bank, on a line of the Grand Trunk Railway, to a point at or near Rivière des Prairies, a distance of fifteen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies respectively; the other subsidies,

9-10 EDWARD VII., A. 1910

including subsidies granted for railways over a line extending beyond a point to which any company hereinbefore mentioned by name is authorized to construct its railway, shall be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively. All the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of July next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council,—except the Erie and Huron Railway, which shall be completed within two years from the first day of July next. And they shall also be constructed according to descriptions and specifications, and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specifying an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make. The location, also, of every such line of railway shall be subject to the approval of the Governor in Council. And all the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized—except as regards the Erie and Huron Railway Company, upon which payment shall be made only upon the completion of the work—except, also as regards the subsidies to the Inverness and Richmond Railway, which shall be paid on the completion of each ten mile section, in accordance, as nearly as practicable, with the agreement between the company and the municipality of Inverness, and with section four of the Act of the Legislature of Nova Scotia, 1890, intituled: An Act to enable the county of Inverness to borrow money—except, also, as regards the subsidies to the Great Eastern Railway Company for bridges over the Nicolet and St. Francis Rivers, and to the Quebec and Lake St. John Railway for the bridge over the St. Charles River, upon which shall be paid fifteen per cent of the value of work done, on monthly progress estimates certified by the Chief Engineer and upon the approval of the Minister of Railways and Canals—and except also the subsidy granted to the Quebec Central Railway Company, the first annual payment upon which shall be made at the end of twelve months from the date of the Chief Engineer's certificate of the completion of the work, and each subsequent payment at the end of each twelve months thereafter, for the term of twenty years.

"The granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing running powers or traffic arrangements or other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those subsidized, as the Governor in Council determines."

By the special Act 53 Vic., ch. 5, 1890 (*Assented to 16th May, 1890*):—

230. In order to enable the Calgary and Edmonton Railway Company to construct so much of their railway as reaches from a point on the line of the Canadian Pacific Railway Company within the town of Calgary to a point on the North Saskatchewan River near Edmonton, the Governor in Council may enter into a contract with such company for the transport of men, supplies, materials and mails for twenty years, and may pay for such services during the said term, eighty thousand dollars per annum, in manner following, that is to say: the sum of eighty thousand dollars to be paid annually on the construction of the railway from Calgary to a point on the North Saskatchewan River near Edmonton,—such payment to be computed from the date of the completion of the railway between such points: Provided that the Governor General in Council may order such sums to be paid in semi-annual instalments, and may permit the company to assign the same by way of security for any bonds or securities which may be issued by the company in respect of the company's undertaking.

By 54-55 Victoria, ch. 8, 1891 (*Assented to 30th Sept., 1891*):—

231. To the Great Northern Railway Company, for a railway from a point at or near New Glasgow or St. Lin to or near to Montcalm, in the province of Quebec, eighteen miles, the balance

SESSIONAL PAPER No. 20

	remaining unpaid of the subsidy, not exceeding \$3,200 per mile, granted by the Act forty-ninth Victoria, chapter ten, nor exceeding in the whole.....	\$ 28,100 00
232.	To the Quebec and Lake St. John Railway Company, for the railway bridge over the St. Charles River to give access to the city of Quebec, the difference between the amount already paid to the company and the sum of \$30,000 mentioned as not to be exceeded by the Act fifty-third Victoria, chapter two, a subsidy not exceeding.....	5,250 00
233.	To the Oshawa Railway Company, for seven miles of their railway from Port Oshawa towards Raglan, in lieu of the subsidy for a like amount granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400 00
234.	To the St. Lawrence, Lower Laurentian and Saguenay Railway Company, for the section of their railway from Grand Piles, on the St. Maurice River to its junction with the Quebec and Lake St. John Railway, the balance remaining unpaid of the subsidy granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole.....	92,784 00
235.	To the Great Eastern Railway Company, for thirty-miles of their railway, from the River St. Francis to the Arthabaska Railway at St. Grégoire station, the balance remaining unpaid of the subsidy, not exceeding \$3,200 per mile, granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole.....	79,700 00
236.	To the South Ontario Pacific Railway Company, for forty-nine and one-half miles of their railway from Woodstock to Hamilton, in the province of Ontario, in lieu of the subsidy for a like amount granted by the Act fifty-second Victoria, chapter three, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	158,400 00
237.	To the Montreal and Ottawa Railway Company (formerly the Vaudreuil and Prescott Railway Company), for thirty miles of their railway from Vaudreuil towards Hawkesbury, the balance remaining unpaid of the subsidy granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole.....	46,040 00
238.	To the Tobique Valley Railway Company, for fourteen miles of their railway from Perth Centre station towards Plaister Rock Island, in lieu of the subsidy for a like amount granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, a subsidy not exceeding \$6,400 per mile, nor exceeding in the whole....	89,600 00
239.	To the Kingston, Smith's Falls and Ottawa Railway Company for fifty-six miles of their railway from the city of Kingston to Smith's Falls, in lieu of the subsidies, not to exceed \$179,200, granted by the Acts fifty-second Victoria, chapter three, and fifty-third Victoria, chapter two, a subsidy not exceeding \$12,534 per annum, to be paid in semi-annual instalments of \$6,267 each, for twenty years, which represents a grant in cash of.....	179,200 00

9-10 EDWARD VII., A. 1910

"Provided, that upon the completion of twenty-eight miles of the said railway a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole fifty-six miles; Provided also, that the company may deposit with the Minister of Finance and Receiver General a sum not exceeding \$1,170,000, in consideration whereof there shall be paid to the company, for twenty years, a semi-annual annuity calculated on a basis of three and one-half per cent on the amount so deposited; Provided further, that the Governor in Council may permit the company to assign the said subsidy and annuity to trustees by way of security for any bonds or securities which may be issued by the company in respect of their undertaking."

240. To the Brockville, Westport and Sault Ste. Marie Railway Company, for twenty miles of their railway, from a point at or near Newboro' towards Palmer's Rapids, in the province of Ontario, in lieu of a subsidy for a like amount granted by the Act fifty-second Victoria, chapter three, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$64,000 00

"Provided that the subsidy hereby granted to the Brockville, Westport and Sault Ste. Marie Railway Company may be paid by instalments, on the completion of each section of the railway as follows, that is to say:—

Sections.	Length in miles.
From, at or near Newboro' to Westport.....	4
From Westport towards Palmers Rapids.....	16

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall be granted to such companies respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council; and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals and specified in an agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location, also of every such line of railway, shall be subject to the approval of the Governor in Council; and all the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized—except as to the subsidy granted to the Kingston, Smith's Falls and Ottawa Railway Company, the first semi-annual payment upon which shall be made at the end of six months from the date of the Chief Engineer's certificate of the completion of twenty-eight miles of the railway, and each subsequent payment at the end of each six months thereafter, for the term of twenty years,—except also as to the Quebec and Lake St. John Railway Company, the subsidy to which shall be paid upon the completion of the work,—except also as to the Brockville, Westport and Sault Ste. Marie Railway Company, the subsidy to which shall be paid as follows: on the completion of that portion of the said road from, at or near Newboro' to Westport, a distance of four miles, the sum of twelve thousand eight hundred dollars, and on the completion of the remaining sixteen miles from Westport towards Palmer's Rapids, the sum of fifty-one thousand two hundred dollars.

"Within one month after the commencement of each session of Parliament, whilst any of the said moneys are being paid out, there shall be laid before Parliament a statement showing all payments of such moneys during the then next preceding year, the names of the respective persons to whom such payments have been made, and the amounts paid them respectively, together with the engineer's report upon which pay-

SESSIONAL PAPER No. 20

ments have been recommended, and copies of all contracts between the Government and the company under which the said subsidies are authorized to be paid.

"The granting of such subsidies respectively shall be subject to such conditions for securing such running power or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

By the Act 55-56 Victoria, chap. 5, 1892 (*Assented to 9th July, 1892*):—

241. To the Lake Erie and Detroit River Railway Company, for fifty-eight miles of their railway from a point at or near Cedar Creek to the town of Ridgetown, in lieu of the subsidies granted to the Lake Erie and Detroit River Railway Company by the Act 53 Victoria, chapter 2, and to the Amherstburg, Lake Shore and Blenheim Railway Company by the Act 52 Victoria, ch. 3.	\$224,000 00
242. To the Ottawa, Arnprior and Parry Sound Railway Company, for fifty-five miles of their railway from Barry's Bay towards the Northern Pacific Junction Railway, a subsidy not exceeding \$6,400 per mile on the first twenty-seven and a half miles out from Barry's Bay, and not exceeding \$3,200 per mile on the second twenty-seven and a half miles, nor exceeding in the whole.	264,000 00
243. To the Canadian Pacific Railway Company or to the Columbia and Kootenay Railway and Navigation Company, for a railway from a point on the Canadian Pacific Railway at or near Revelstoke to the head of Arrow Lake, for twenty-five miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	80,000 00
244. To the Tobique Valley Railway Company, for a railway from the north end of the eleven miles for which a subsidy was granted by the Act 53 Victoria, chapter 2, to Plaister Rock Island, for 3 miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	9,600 00
245. To the Monfort Colonization Railway Company, for twenty-one miles of their railway from Lachute, St. Jérôme or a point at or near St. Sauveur, on the line of the Montreal and Western Railway, to Monfort and westward, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	67,200 00
246. To the Ontario, Belmont and Northern Railway Company, for ten miles of their railway from the Belmont iron mines to the Canadian Pacific Railway and the Central Ontario Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	32,000 00
247. To the Montreal and Champlain Junction Railway Company, the balance remaining unpaid of the subsidies granted by the Acts 50-51 Victoria, chapter 24, and 51 Victoria, chapter 3, a subsidy of.	15,100 00
248. To the Buctouche and Moncton Railway Company, for thirty-two miles of their railway from Moncton to Buctouche, the balance remaining unpaid of the subsidy, not exceeding \$3,200 per mile, granted by the Acts 49 Victoria, chapter 10, and 50-51 Victoria, chapter 24, not exceeding in the whole.	35,480 00
249. To the Cobourg, Northumberland and Pacific Railway Company, for nineteen miles of their railway from Cobourg to the Ontario and Quebec Railway (in addition to the subsidy granted by the Act 53 Victoria, chapter 2), a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	60,800 00

250.	For a railway from the parish of St. Rémi, in the county of Napierville, to St. Cyprien in the said county, for twelve miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 38,400 00
251.	To the Inverness and Richmond Railway Company (or any other company undertaking the work), for twenty-five miles of their railway from a point on the Cape Breton Railway, at or near Orangedale, to Broadcove, a subsidy not exceeding \$3,200 per mile, in lieu of the subsidy of \$50,000 granted to the said railway company by 53 Victoria, chapter 2, and on the same conditions, not exceeding in the whole.....	80,000 00
252.	To the Nicola Valley Railway Company, for twenty-five miles of their railway from a point on the Canadian Pacific Railway at or near Spence's Bridge towards Nicola Lake	80,000 00
253.	To the Lotbinière and Megantic Railway Company, for fifteen miles of their railway from a point at or near St. Jean Deschailons towards Glen Lloyd, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	48,000 00
254.	To the Stewiacke and Lansdowne Railway Company, for a railway from a point on the Intercolonial Railway, through the Stewiacke Valley, on a line which will afford facilities of communication with the iron mines at Springside, Upper Stewiacke and Musquodoboit settlements, twenty-five miles, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	80,000 00
255.	To the Philipsburg Junction Railway and Quarry Company, for six and seven-hundredths miles of their railway from Stanbridge Station to Philipsburg, in the county of Missisquoi, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	21,600 00
256.	To the Kingston, Napanee and Western Railway Company, for three miles of their railway from a point at or near Harrowsmith to a point at or near Sydenham, in lieu of the subsidy granted for this section of road by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	9,600 00
257.	For a railway from Cape Tourmente towards Murray Bay, in the province of Quebec, twenty miles, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	64,000 00
258.	To the Stewiacke and Lansdowne Railway Company, for a railway from Truro, or a point between Truro and Stewiacke, to Newport or to Windsor, in the province of Nova Scotia, for forty-nine miles of such railway, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	156,800 00
259.	To the Restigouche and Victoria Railway Company, for fifteen miles of their railway from Campbellton towards Grand Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000 00
260.	For a railway from St. Johns to Ste. Rosalie, thirty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	102,400 00
261.	For a railway from St. Placide to St. Andrew's, eight miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..	25,600 00
262.	For a railway to complete the connection between Sydney and Louisburg, in the county of Cape Breton, for twenty-eight miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	89,600 00

SESSIONAL PAPER No. 20

- 263.** To the Belleville and Lake Nipissing Railway Company, for thirty miles of their railway from Belleville to Tweed and thence to Bridgewater, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$ 96,000 00
- 264.** To the Kingston, Smith's Falls and Ottawa Railway Company, for fifty-six miles of their railway from the city of Kingston to Smith's Falls, in lieu of the subsidies, not to exceed \$179,200, granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy calculated on a basis of three and a half per cent on the amount of such subsidies so granted, to be paid in semi-annual instalments for such period not exceeding twenty-one years, as the company may elect, which represents a grant in cash of..... 179,200 00

" Provided, that upon the completion of twenty-eight miles of the said railway a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole fifty-six miles : Provided also, that the company may deposit with the Minister of Finance and Receiver General, a sum not exceeding \$1,170,000, in consideration whereof there shall be paid to the company for such period not exceeding twenty years as the company may elect, a semi-annual annuity calculated on a basis of three and a half per cent on the amount so deposited. Provided further, that the Governor in Council may permit the company to assign the said subsidy and annuity to trustees by way of security for any bonds or securities which may be issued by the company in respect of their undertaking."

- 265.** To the St. Catharines and Niagara Central Railway Company, for thirty-four miles of their railway from the city of St. Catharines to the city of Hamilton, in lieu of the subsidies, not to exceed \$108,000, granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy calculated on a basis of three and a half per cent on the amount of the said subsidies, to be paid in semi-annual instalments for such period, not exceeding twenty years, as the company may elect, representing a grant in cash of \$108,000 : Provided that, upon the completion of ten miles of said railway, a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole thirty-four miles. Provided also, that the company may deposit with the Minister of Finance and Receiver General a sum not exceeding \$400,000, in consideration whereof there shall be paid by the Government to the company, for such period not exceeding twenty years, as the company may elect, a semi-annual annuity, calculated on a basis of three and a half per cent on the amount so deposited, or a guarantee of a like sum, as interest on the bonds of the company : Provided further, that the company, with the approval of the Governor in Council, may assign the said subsidy and annuity to trustees by way of security for principal, or interest of any bonds or securities which may be issued by the company in respect of their undertaking, and the subsidy last above mentioned to the St. Catharines and Niagara Central Railway Company shall be paid in instalments, the first semi-annual payment upon which shall be made at the end of the six months from the date of the Chief Engineer's certificate of the completion of the first ten miles of railway, and each subsequent payment at the end of six months thereafter, for the term of twenty years or less. It is a condition of this subsidy that the sum not exceeding \$400,000 above mentioned shall be deposited with the Finance Minister before January 1st, 1893.

9-10 EDWARD VII., A. 1910

266.	To the Woodstock and Centreville Railway Company, for a railway from Woodstock towards Centreville, twenty miles, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$64,000 00
267.	To the Brockville, Westport and Sault Ste. Marie Railway Company, for the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding \$3,200 per mile, and also for the balance remaining unpaid of the subsidy granted by the Act 53 Victoria, chapter 2, nor exceeding in the whole.....	96,800 00
268.	To the New Glasgow Iron, Coal and Railway Company, for a railway from Eureka Junction on the Intercolonial Railway to a point at or near Sunnybrae, including a branch line to the charcoal iron furnace at Bridgeville, for twelve and a half miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	40,000 00
269.	To the Thousand Island Railway Company, for an extension of their railway to connect with the Brockville, Westport and Sault Ste. Marie Railway, the Kingston, Napanee and Western Railway, the Kingston, Smith's Falls and Ottawa Railway, or the waters of the Rideau Canal, and an extension across the mouth of the Gananoque River, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole.....	44,000 00
Payable, \$14,000 on the completion of the last named or southern extension, and the balance of said subsidy, being \$30,000, on the completion of the first named or northern extension of their railway.		
270.	To the Manitoulin and North Shore Railway Company, for thirty miles of their railway from Little Current to the Algoma Branch of the Canadian Pacific Railway, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$96,000 00
271.	To the Lindsay, Bobcaygeon and Pontypool Railway Company, for sixteen miles of their railway from the end of the line subsidized by the Act 53 Victoria, chapter 2, at the junction with the Midland Railway, to Pontypool, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	51,200 00
272.	For seventy-five miles of the railway from Sand Point, Shelburne Harbour, in Nova Scotia, to Annapolis Royal, in the county of Annapolis and to a junction at or near New Germany on the Nova Scotia Central Railway, with a view to future construction to Liverpool, in lieu of the subsidy of a like amount granted by the Act 53 Victoria, chapter 2, for the same length of railway from Shelburne and from Liverpool, towards Annapolis, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	240,000 00
273.	To the Kingston, Napanee and Western Railway Company, for twenty miles of their railway, being extensions or branches in the counties of Peterborough, Hastings, Addington, Frontenac or Leeds, towards iron deposits, a subsidy not exceeding \$3,200 per mile, payable in instalments regulated by the length of each of the said extensions, additions or branches, the subsidy not exceeding in the whole.....	64,000 00
274.	To the St. John Valley and Rivière du Loup Railway Company, for ten miles of their railway from the north end of the line subsidized by the Act 53 Victoria, chapter 2, towards the town of Woodstock, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000 00

SESSIONAL PAPER No. 20

- 275.** To the Cobourg, Northumberland and Pacific Railway Company, for thirty miles of their railway from Cobourg to the Ontario and Quebec Railway, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$ 96,000 00
- 276.** To the Ottawa, Arnprior and Parry Sound Railway Company, for thirty miles of their railway, from Eganville to Barry's Bay, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 96,000 00
- 277.** To the Ottawa, Arnprior and Parry Sound Railway Company, for twenty-two miles of their railway from a point on the Canadian Pacific Railway to Eganville, in lieu of the subsidy granted by the Act 51 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400 00
- 278.** To the Lake Témiscamingue Colonization Railway Company, for thirty-five miles of their railway from Mattawa to the Long Sault, in lieu of the subsidies granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 112,000 00
- 279.** To the Témiscouata Railway Company, for twelve miles of their railway from the north end of the section of the St. François Branch subsidized by the Act 51 Victoria, chapter 3, being the first twelve miles on the section subsidized by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$1,800 per mile, in addition to the subsidy already granted, and not exceeding in the whole..... 21,600 00
- 280.** To the Tilsonburg, Lake Erie and Pacific Railway Company, for sixteen miles of their railway from Port Burwell to Tilsonburg, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 51,200 00
- 281.** To the Woodstock and Centreville Railway Company, for six miles of their railway from the west end of their twenty miles subsidized by the Act 50-51 Victoria, chapter 24, to the international boundary between the province of New Brunswick and the state of Maine, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 19,200 00
- 282.** To the Lake Témiscamingue Colonization Railway Company, for 15 miles of their railway from the Long Sault to the crossing of the Kippewa River, a subsidy not exceeding \$3,200 per mile—and a subsidy of fifteen per cent on the value of a wooden truss bridge over the Ottawa River near Mattawa, not exceeding \$15,000,—nor exceeding in the whole..... 63,000 00
- 283.** To the Goderich and Wingham Railway Company, for thirty-one miles of their railway from Goderich to Wingham, via Port Albert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 99,200 00
- 284.** To the Joliette and St. Jean de Matha Railway Company, for eight miles of their railway from St. Félix de Valois to St. Jean de Matha, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 25,600 00
- 285.** To the Bracebridge and Baysville Railway Company, for fifteen miles of their railway from Bracebridge towards Baysville, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 48,000 00
- 286.** To the Nipissing and James Bay Railway Company, for twenty-five miles of their railway from, at or near North Bay station on

9-10 EDWARD VII., A. 1910

	the Canadian Pacific Railway towards James Bay, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 80,000 00
287.	For a railway from a point on the Intercolonial Railway between Ste. Flavie and Little Métis station to Matane, for fifty miles of such railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	160,000 00
288.	To the Ontario and Pacific Railway Company, for fifty-three and eighty-seven hundredths miles of their railway from Cornwall to Ottawa, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	172,400 00
289.	For a railway from a point on the line of the Canadian Pacific Railway on the Isle Jésus, in the county of Laval, towards St. Eustache, for twelve miles of such railway, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, to the Carillon and Grenville Railway Company, for twelve miles of their railway, from St. Eustache to Sault au Récollet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	38,400 00
290.	For a railway from St. Eustache to St. Placide, in the county of Two Mountains, for eighteen miles of such railway, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	57,600 00
291.	To the Port Arthur, Duluth and Western Railway Company, the balance remaining unpaid of the subsidy granted by the Act 51 Victoria, chapter 3, not exceeding, with the amount already paid, \$3,200 per mile, nor exceeding in the whole.....	114,125 00
292.	To the Drummond County Railway Company for four and six-tenths miles of their railway from Bull's Wharf, on the St. Lawrence River, near Nicolet, to Ste. Rosalie Junction, an excess of distance by the constructed line over the subsidies heretofore voted for a railway between the said points, \$3,200 per mile, not exceeding in the whole.....	14,720 00
293.	To the St. Lawrence and Adirondack Railway Company, for five and forty-two hundredths miles of their railway, from Huntingdon towards the international boundary, which, with the distance between Valleyfield and Huntingdon, twelve and fifty-eight hundredths miles, makes up the distance of eighteen miles named in the 53 Vic., chap. 2, granting a subsidy to this company, and for five and forty-hundredths miles from the east end of the eighteen miles referred to to the international boundary, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	25,024 00

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications, and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies respectively shall be payable out of the Consolidated

SESSIONAL PAPER No. 20

Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized,—except as to subsidies with respect to which it is hereinbefore otherwise provided, and except also as to the subsidy granted to the Kingston, Smith's Falls and Ottawa Railway Company, and the subsidy granted to the St. Catharines and Niagara Central Railway Company, the first semi-annual payments upon both of which shall be made at the end of six months from the date of the Chief Engineer's certificate of the completion of their railways respectively, and each subsequent payment at the end of each six months thereafter, for the term of twenty years or less.

"The granting of such subsidies respectively shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines."

294. Notwithstanding the expiration of the time limited by the Act 47 Victoria, chapter 8, and by the contract entered into with the Pontiac Pacific Junction Railway Company, the Governor in council may pay the balance remaining unpaid of the subsidy granted by the said Act to the said company, according as it becomes due and payable in accordance with the said contract, and subject to the terms and conditions applicable to the said subsidy under the terms of the said Act.

295. Notwithstanding the expiration of the time limited by the Act 52 Victoria, chapter 3, and by the contract entered into with the Quebec and Lake St. John Railway Company, the Governor in Council may pay the balance remaining unpaid of the subsidy granted by the said Act to the said company, according as it becomes due and payable in accordance with the said contract, and subject to the terms and conditions applicable to the said subsidy under the terms of the said Act; and notwithstanding anything contained in the Act 50-51 Victoria, chapter 24, the Governor in Council may also pay to the said company the balance remaining unpaid of the subsidy granted to the company by the said Act, amounting to \$12,800, on the four miles of their road from the north end of the main line subsidized towards Roberval.

By the Act 56 Vic., chap. 2, 1893 (*Assented to 1st April, 1893*):—

- | | |
|---|--------------|
| 296. To the Great Eastern Railway Company, for twenty miles of their railway, from the east end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Grégoire, towards the Chaudière Junction station on the Intercolonial Railway, in the province of Quebec, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | \$ 64,000 00 |
| 297. To the United Counties Railway Company, for thirty-two miles of their railway, from a point at or near the town of Iberville to St. Hyacinthe, and thence towards Sorel, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, for a railway from St. Johns to Ste. Rosalie, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 102,400 00 |
| 298. To the Ontario, Belmont and Northern Railway Company, for ten miles of their railway, divided into two sections: first, from the Belmont Iron Mines to Marmora village; second, from Marmora village to the junction with the Ontario Central Railway, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... | 32,000 00 |
| 299. To the Central Ontario Railway Company, for twenty miles of their railway, from Coe Hill or Gilmore, or some point between | |

9-10 EDWARD VII., A. 1910

	Coe Hill and Gilmore, to Bancroft, via L'Amable, or as near thereto as practicable, in lieu of the subsidy granted by the Act 48-49 Victoria, chapter 59, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 64,000 00
300.	To the Quebec and Lake St. John Railway Company, for thirty miles of their railway, from Lake St. John towards Chicoutimi, the balance remaining unpaid of the subsidy granted by the Act 51 Victoria, chapter 3, not exceeding in the whole.....	81,040 00
301.	To the Irondale, Bancroft and Ottawa Railway Company, for fifty miles of their railway, from the Victoria branch of the Midland Railway to the village of Bancroft, in the county of Hastings, the balance remaining unpaid of the subsidy granted by the Act 47 Victoria, chapter 8, and again granted by the Act 52 Victoria, chapter 3, not exceeding in the whole.....	145,000 00
302.	To the Beauharnois Junction Railway Company, for thirty miles of their railway, from Ste. Martine towards St. Anicet, the balance remaining unpaid of the subsidy granted by the Act 50-51 Victoria, chapter 24, not exceeding in the whole.....	3,500 00
303.	To the St. Stephen and Milltown Railway Company, for three and a half miles of their railway, from the town of St. Stephen to the town of Milltown, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	11,200 00
304.	To the Quebec, Montmorency and Charlevoix Railway Company, for thirty miles of their railway, from the east bank of the River St. Charles, to or near to Cape Tourmente, in the province of Quebec, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole..	30,400 00
305.	To the Ottawa and Gatineau Valley Railway Company, for sixty-two miles of their railway, from Hull station towards Le Désert, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole.....	89,248 00
306.	To the Grand Trunk, Georgian Bay and Lake Erie Railway Company, for fifteen miles of their railway, from the village of Tara, or some point between Tara and Hepworth, to the town of Owen Sound, in the province of Ontario, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000 00
307.	To the Nova Scotia Central Railway Company (or to such person or persons or company as in the opinion of the Minister or acting Minister of Justice are entitled to the same) for eighty miles of their railway, from Lunenburg, on the east coast of Nova Scotia, westward to a point in the district of New Germany, together with a spur about three-fourths mile long to Bridgewater railway wharf, and from a point thirty-three and a half miles from Lunenburg and running to Middleton on the Windsor and Annapolis Railway, of unpaid subsidies granted by the Acts 50-51 Victoria, chapter 24, and 51 Victoria, chapter 3, an amount not exceeding in the whole.....	4,500 00
308.	To the Great Northern Railway Company, for eighteen miles of their railway, from a point at or near New Glasgow or St. Lin, to or near to Montcalm, in the province of Quebec, the balance remaining unpaid of the subsidy granted by the Act 54-55 Victoria, chapter 8, not exceeding in the whole.....	25,600 00
309.	To the Great Northern Railway Company, for fifteen miles of their railway, from, at or near Montcalm to the Canadian Pacific	

SESSIONAL PAPER No. 20

	Railway between Joliette and St. Felix de Valois, in lieu of the subsidy granted by the Act 53 Victoria, chap. 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 48,000 00
310.	To the Montfort Colonization Railway Company, for twenty-one miles of their three-feet gauge railway from Lachute, St. Jérôme, or a point at or near St. Sauveur, on the line of the Montreal and Western Railway, to Montfort and westward, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	67,200 00
311.	To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from a point on the Canadian Pacific Railway at or near Maskinongé or Louiseville, towards the parish of St. Michel des Saints, on the river Mattawa, in the province of Quebec, and for fifteen miles of their railway from the north end of the fifteen miles above referred to, towards the parish of St. Michel des Saints on the river Mattawa, in the province of Quebec, in lieu of the subsidies granted by the Acts 52 Victoria, chap. 3, and 53 Victoria, chap. 2, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000 00
312.	To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the village of Parry Sound to the village of Sundridge, or some other point on the Northern Pacific Junction Railway, in the province of Ontario, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole.....	97,600 00
313.	To the Jacques Cartier Union Railway Company, for extending and completing their railway, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, a subsidy of.....	20,000 00
314.	To the Oshawa Railway Company, for seven miles of their railway and branches as follows: from Port Oshawa to a point at or near Edmondson's Falls mill site, near Mill Street, in the town of Oshawa (this portion being known as the "Lake" section of the said railway); thence to a point at or near the town hall in the town of Oshawa, and thence to the Oshawa station of the Grand Trunk Railway Company of Canada (this portion being known as the "Town" or "Northern" section of the said railway)—in lieu of the subsidy granted by the Act 54-55 Victoria, chapter 8, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400 00

* All the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council.

"The granting of such subsidies respectively shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

"All the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed

in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized,—except as follows :—

“(a.) The subsidy to the Ontario, Belmont and Ottawa Railway Company, which shall be paid as follows : on the completion of the first section, an instalment proportionate to the value of the said section in comparison with that of the ten miles hereby subsidized, to be established as aforesaid, and the balance of the said subsidy on the completion of the second section ;

“(b.) The subsidy to the Oshawa Railway Company, which shall be paid as follows : on the completion of the “Town” or “Northern” section, an instalment proportionate to the value of the said section in comparison with that of the seven miles hereby subsidized, to be established as aforesaid, and the balance of the said subsidy, on the completion of the “Lake” section of the said railway.”

By the Act 57-58 Vic., cap. 4, 1894. (*Assented to, 23rd July, 1894*) :—

315.	To the Bracebridge and Baysville Railway Company, for fifteen miles of their railway from Bracebridge towards Baysville, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	\$ 48,000
316.	To the Brockville, Westport and Sault Ste. Marie Railway, the balance remaining unpaid of the subsidy granted by chapter 3 of 1889, not exceeding \$3,200 per mile, and also the balance remaining unpaid of the subsidy granted by chapter 2 of 1890, which was re-granted by chapter 5 of 1892 ; the whole not exceeding	86,800
317.	To the Tilsonburg, Lake Erie and Pacific Railway Company, for sixteen miles of their railway, from Port Burwell to Tilsonburg, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	51,200
318.	To the Brantford, Waterloo and Lake Erie Railway Company, for eighteen miles of their railway, from the town of Brantford to the village of Hagarsville or the village of Waterford, or some intermediate point on the Canada Southern Railway, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, not exceeding \$3,200 per mile, nor exceeding in the whole	4,790
319.	To the St. Catharines and Niagara Central Railway Company, for 34 miles of their railway from the city of St. Catharines to the city of Hamilton, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	108,800
320.	To the Montreal and Ottawa Railway Company (formerly the Vaudreuil and Prescott Railway Company), for thirty miles of their railway from Vaudreuil towards Hawkesbury, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887 ; and for 30 miles of their railway from the western end of the 30 miles first mentioned towards Ottawa, the balance remaining unpaid of the subsidy granted by chapter 2 of 1890, not exceeding \$3,200 per mile ; the whole not exceeding	118,400
321	Notwithstanding the expiration of the time limited by chapter 2 of 1890, and by the contract entered into with the Quebec Central Railway Company, and notwithstanding anything otherwise in the said chapter 2 contained, the Governor in Council may pay the subsidy granted by the said chapter to the said company at the present worth of the twenty annual payments mentioned in the said chapter (interest computed at four per cent), for and upon the completion of its railway extending from a point between the Chaudière River and Tring Station to a point on the International Railway at or near Lake Megantic, and upon the inspection and acceptance of the same by the Chief Engineer of Railways and Canals, the sum in all of	288,000

SESSIONAL PAPER No. 20

- 322.** To the Philipsburg Junction Railway and Quarry Company, for $\frac{67}{100}$ mile of their railway from Stanbridge Station to Philipsburg, in the county of Missisquoi and a branch to Missisquoi Bay, the balance remaining unpaid of the subsidy granted by chapter 5 of 1892, not exceeding \$3,200 per mile, nor exceeding in the whole..... \$ 2,912
- 323.** To the Joliette and St. Jean de Matha Railway Company, for 8 miles of their railway from St. Félix de Valois to St. Jean de Matha, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 23,600
- 324.** To the Lake Temiscamingue Colonization Railway Company, for their railway from Mattawa to the foot of the Kippewa Lake, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole \$160,000,—also 15 per cent on the value of a wooden truss bridge over the Ottawa River near Mattawa, not to exceed \$15,000 in all, in lieu of the subsidies granted by chapter 5 of 1892,—also the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, for their railway from Long Sault to Lake Kippewa, a subsidy not exceeding \$3,200 per mile of railway and 15 per cent on the value of the bridges,—also, a sum of \$1,750 additional per mile on their said railway from Mattawa to the foot of the Kippewa Lake; the whole not exceeding..... 274,940
- 325.** For a railway from St. Placide to St. Andrews, 8 miles, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 25,600
- 326.** For a railway from St. Eustache to St. Placide, in the county of Two Mountains, for 18 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 57,600
- 327.** For a railway from a point on the line of the Canadian Pacific Railway on Isle Jésus, in the county of Laval, towards St. Eustache, for 12 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, to the Carillon and Grenville Railway Company, for 12 miles of their railway, from St. Eustache to Sault au Récollet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 328.** For a railway from the parish of St. Rémi, in the county of Napierville, to St. Cyprien, in the said county, for 12 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 38,400
- 329.** To the Pontiac Pacific Junction Railway Company, for bridging the several channels of the Ottawa River at Culbute and west thereof, a subsidy of \$31,500, to be paid out monthly as the work progresses, upon the certificate of the chief engineer of government railways, in the proportion which the value of the work executed bears to the value of the whole work undertaken; and for 3 miles of their railway extending from a point 3 miles east of Pembroke to Pembroke, in the province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole \$9,600, in lieu of the subsidy granted by chapter 3 of 1888; provided that the entire work subsidized upon this railway shall be completed within 4 years from the passing of this Act; the subsidy granted by this Act not to exceed in the whole..... 41,100

9-10 EDWARD VII., A. 1910

330.	To the Pontiac Pacific Junction Railway Company, for the construction or acquisition of $7\frac{1}{2}$ miles of railway, from Hull to Aylmer, in lieu of the subsidy granted by chapter 2 of 1890, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	\$ 24,000
331.	To the Pontiac Pacific Junction Railway Company, for 85 miles of their railway from Aylmer to Pembroke, the balance remaining unpaid of the subsidy granted by chapter 8 of 1884, less the subsidy granted for the line from Hull to Aylmer, provided the Ottawa River is crossed at some point not east of Lapasse, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	73,172
332.	To the Harvey Branch Railway Company, for 3 miles of their railway from the southern terminus of the Albert Railway to Harvey Bank, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, not exceeding \$3,200 per mile, nor exceeding in the whole.....	4,046
333.	For a railway from a point on the Intercolonial Railway near Newcastle via Douglastown, to a point on the River Miramichi opposite the town of Chatham, in the province of New Brunswick, 6 miles, in lieu of the subsidy granted by chapter 10 of 1886, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	19,200
334.	For a railway from some point on the Joggins Railway, near the Hebert River, to Young's Mills, in the province of Nova Scotia, a distance of 5 miles, in lieu of the subsidy granted by chapter 3 of 1889, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	16,000
335.	To the Woodstock and Centreville Railway Company, for a railway from Woodstock to the international boundary between the province of New Brunswick and the state of Maine, 26 miles, in lieu of the subsidies granted by chapter 24 of 1887 and chapter 2 of 1890 a subsidy not exceeding \$3,200 per mile nor exceeding in the whole.....	83,200
336.	For 90 miles of the railway from Newport or Windsor to Truro, or to a point between Truro and Stewiacke, and from a point on the said railway to a point at or near Eastville, and from Eastville through the valley of the Musquodoboit River towards a point on the proposed Dartmouth branch of the Intercolonial, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile; and also for a railway bridge over the Shubenacadie River on the line of the said railway, a subsidy of 15 per cent on the value of the structure; the whole not exceeding.....	300,000
337.	To the Nipissing and James Bay Railway Company, for 25 miles of their railway from, at or near North Bay Station on the Canadian Pacific Railway towards James Bay, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile; also for 43 miles of their railway from North Bay towards Lake Tamagaming, a subsidy not exceeding \$3,200 per mile; the whole not exceeding.....	217,000
338.	To the Lotbinière and Mégantic Railway Company, for 15 miles of their railway, in addition to the 15 miles already subsidized and built, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000
339.	To the Drummond County Railway Company, for 30 miles of their railway from St. Leonard northerly towards a junction with the Intercolonial Railway at Chaudière Junction, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000

SESSIONAL PAPER No. 20

340. For a railway from Lime Ridge, in the county of Wolfe, in the province of Quebec, northerly through the county of Wolfe and into the county of Megantic, a distance not exceeding 50 miles from Lime Ridge, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 160,000
341. To the Strathroy and Western Counties Railway Company, for 25 miles of their railway from St. Thomas through the counties of Elgin and Middlesex, towards Forest Station or Park Hill, on the Grand Trunk Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	80,000
342. To the Parry Sound Colonization Railway Company, for 20 miles of their railway east from Parry Sound, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	64,000
343. To the Manitoulin and North Shore Railway Company, for 10 miles of their railway from Little Current to Nelson, on the Algoma Branch of the Canadian Pacific Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	32,000
344. To the United Counties Railway Company for 32 miles of their railway from Iberville to Sorel, in addition to the 32 miles already subsidized, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	102,400
345. To the Joliette and St. Jean de Matha Railway Company, for 12 miles of their railway from St. Jean de Matha to Ste. Émilie de L'Énergie, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	38,400
346. To the Great Northern Railway Company, for 22 miles of their railway, from the eastern end of the 15 miles subsidized by chapter 2 of 1893 to a point between Joliette and St. Félix de Valois, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	70,400
347. To the Quebec and Lake St. John Railway Company, for 2 miles of the Chicoutimi branch of their railway, from the east end of the 50 miles already subsidized and built eastward to deep water at Chicoutimi, a subsidy not exceeding \$3,200 per mile; also for 12 miles from the 52nd mile on the Chicoutimi branch to Ha Ha Bay, a subsidy not exceeding \$3,200 per mile; the whole not exceeding.....	44,800
348. To the Pontiac and Ottawa Railway Company, for 23 miles of their railway from the point of divergence from the Pontiac Railway to Ferguson's Point, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	73,600
349. To the Ottawa and Gatineau Valley Railway Company, for 20 miles of their railway from the eastern end of the 62 miles already subsidized towards Désert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	64,000
350. To the Canada Eastern Railway Company for 6 miles of their railway from the town of Chatham to Black Brook, a subsidy not exceeding \$3,200 per mile; also for 4 miles of their railway for a branch to the village of Nelson, a subsidy not exceeding \$3,200 per mile; the whole not exceeding.....	32,000
351. For a railway from Cross Creek Station, on the Canada Eastern Railway to Stanley village, in the county of York, in the province of New Brunswick, 6 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	19,200
352. To the Restigouche and Victoria Railway Company, for 20 miles of their railway from the western end of the 15 miles subsidized by chapter 5 of 1892, towards Grand Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	64,000

9-10 EDWARD VII., A. 1910

353. To the Central Railway Company of New Brunswick, for 15 miles of their railway from Chipman station to the Newcastle coal fields, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$ 48,000
354. To the Tobique Valley Railway Company, for 15 miles of their railway from the present terminus at Plaister Rock easterly, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	48,000
355. Towards the restoration or renewal of the railway bridge on the South-eastern Railway over the Yamaska River at Yamaska, a subsidy equal to one-third of the actual cost of the renewal of the bridge, but the grant not to exceed in the whole.....	50,000
356. To the Boston and Nova Scotia Coal and Railway Company, for 10½ miles of their railway from the north end of the section already subsidized to Broad Cove, a subsidy not exceeding \$3,200 per mile; also for 25 miles of their railway from a point on the Cape Breton Railway at or near Orangedale towards Broad Cove, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile; the whole not exceeding	113,600
357. For a railway from Port Hawkesbury towards Cheticamp, 25 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	80,000
358. To the Manitoba North-western Railway Company, for 100 miles of the extension of their main line from its present western terminus towards Prince Albert,—the company relinquishing 3,200 acres of the land grant per mile, and the whole road to be operated as a continuous line of railway under one management, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	320,000
359. For a line of railway from the junction of the Elk and Kootenay Rivers to Coal Creek, a distance of 34 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	108,800
360. For a railway from Abbotsford Station on the Mission Branch of the Canadian Pacific Railway to the town of Chilliwack, 21 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	67,200
361. To the Nicola Valley Railway Company, for 28 miles of their railway from the western end of the section of their road subsidized by chapter 5, of 1892, towards Nicola Lake, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	89,600
362. To the Nakusp and Slocan Railway Company, for 38 miles of their railway from the town of Nakusp to a point at or near the Forks of Carpenter Creek, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	121,600
363. To the Pontiac and Kingston Railway Company, for 22 miles of a railway from Portage du Fort to Upper Thorne Centre, via Shawville, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	70,400
364. To the New Glasgow Iron, Coal and Railway Company, for 5 miles of their railway, from Sunnybrae to Kerrogare, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole....	16,000 00
365. To the South Shore Railway Company, for 35 miles of their railway from Yarmouth towards Shelburne and Lockport, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	112,000 00
366. To the Cape Breton Railway Extension Company, for 30 miles of railway from Port Hawkesbury to St. Peter's, on their line of railway from Port Hawkesbury to Louisbourg, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000 00

SESSIONAL PAPER No. 20

367. For a railway from a point on the Intercolonial Railway between Norton and Sussex Stations towards Havelock, 20 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	\$ 64,000 00
368. For a railway from St. John to Barneville, for a distance of 10 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	32,000 00
369. For a line of railway from Cap de la Magdeleine to connect with the Piles Branch of the Canadian Pacific Railway, 3 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole	9,600 00
370. To the Canada Eastern Railway Company, for an extension of one mile from the western end of their railway, to connect with the Canadian Pacific Railway, a subsidy not exceeding.	3,200 00
371. To the Great Northern Railway Company, for 30 miles of their railway from its junction with the Lower Laurentian Railway near St. Tite, in the vicinity of the River St. Maurice, westward, in lieu of the subsidy granted to the Maskinongé and Nipissing Railway Company by chapter 2 of 1893, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	96,000 00
372. To the Lindsay, Bobcaygeon and Pontypool Railway Company, for 16 miles of their railway from Bobcaygeon to the Midland Railway, and for another 16 miles from the end of the first mentioned 16 miles to Pontypool, in lieu of the subsidies granted by chapter 2 of 1890, and chapter 5 of 1892, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	102,400 00
373. To the Montfort Colonization Railway Company, for 12 miles of their railway from the end of the 21 miles already subsidized westward to a point on the Rouge River, in the county of Argenteuil, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	38,400 00
374. For a railway from a point on the Caragnet Railway, at or near Pokemouche siding, towards Tracadie village, 12 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	38,400 00

The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railway and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council.

The granting of such subsidies respectively shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

The said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized,—except as to subsidies with respect to which it is hereinbefore otherwise provided, and except also as to the

9-10 EDWARD VII., A. 1910

subsidy granted to the Great Northern Railway Company by chapter two of 1893, for fifteen miles from Montcalm to the Canadian Pacific Railway, which shall be paid as follows: on the completion of the eighteen miles from New Glasgow to Montcalm and of two miles out of the fifteen miles from Montcalm to the Canadian Pacific Railway, an instalment proportionate to the value of the ten miles out of the total mileage subsidized by chapter two of 1893, to be established as aforesaid, and the balance of the said subsidy on the completion of the remaining thirteen miles of the said railway.

No subsidies were authorized by 58-59 Vict. (1895), nor by 59 Vict. (1896).

By the Act 60-61, chapter 4, 1897 (*Assented to 29th June, 1897*).

1. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and includes the amount expended upon any bridge up to and not exceeding twenty-five thousand dollars, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway, nor the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated), which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

- 375.** To the Ottawa and New York Railway Company, for 53 $\frac{87}{100}$ miles of their railway from Cornwall to Ottawa, in lieu of the subsidy granted by chapter 5 of the statutes of 1892;
- 376.** To the Kingston, Smith's Falls and Ottawa Railway Company, for 101 miles of their railway from Kingston, or a junction with the Grand Trunk Railway at Rideau or some other point near Kingston, to Ottawa, in lieu of the subsidy granted by chapter 5 of 1892;
- 377.** For a railway from a point on the Canadian Pacific Railway, at or near either Welsford or Westfield, or between the said two points, to Gagetown, in the county of Queen's, New Brunswick, not exceeding 30 miles, in lieu of the subsidy granted by chapter 2 of 1890;
- 378.** To the Cobourg, Northumberland and Pacific Railway Company, for 50 miles of their railway from Cobourg to the Ontario and Quebec Railway, in lieu of the subsidies granted by chapter 5 of 1892;
- 379.** To the Ottawa and Gatineau Railway Company, for 20 miles of their railway from the end of the 62nd mile subsidized towards Désert, in lieu of the subsidies granted by chapter 4 of 1894;
- 380.** To the Great Northern Railway Company, for 9 miles of their railway, being shortage in distance between Montcalm and St. Tite;
- 381.** To the St. Gabriel de Brandon and Ste. Emélie de l'Energie Railway Company, for 15 miles of their railway from St. Gabriel to Ste. Emélie de l'Energie, and 5 miles from a point on the main line to St. Jean de Matha, making in all 20 miles, in lieu of the subsidy granted by chapter 4 of 1894;
- 382.** To the Central Railway Company of New Brunswick, for 15 miles of their railway from Chipman Station to Newcastle Coal Fields, county of Queen's, in lieu of the subsidy granted by chapter 4 of 1894;

SESSIONAL PAPER No. 20

- 383.** To the Gulf Shore Railway Company, for $5\frac{1}{2}$ miles of their railway from the end of the section subsidized to Tracadie and thence to Big Tracadie, New Brunswick ;
- 384.** For a railway from Campbellton, on the Intercolonial Railway, towards Grand Falls, New Brunswick, a distance of 20 miles, commencing at Campbellton, in lieu of the subsidy granted by chapter 4 of 1894 ;
- 385.** To the Pontiac Pacific Junction Railway Company, for $7\frac{1}{2}$ miles of their railway from Hull to Aylmer, in lieu of the subsidy granted by chapter 2 of 1890 ;
- 386.** To the Schomberg and Aurora Railway Company, for 15 miles of their railway from a point on the Grand Trunk Railway between King and Newmarket to Schomberg, in the province of Ontario ;
- 387.** To the Tilsonburg, Lake Erie and Pacific Railway Company, for $3\frac{5}{100}$ miles of their railway from the present terminus, through Tilsonburg to the Michigan Central Railway, in the province of Ontario.
- 388.** To the Ottawa, Arnprior and Parry Sound Railway Company, for 52 miles of their railway, from the crossing of the Northern Pacific Junction Railway to 55 miles west of Barry's Bay, and also for 4 miles of their railway across Parry Island ;
- 389.** To the Pembroke Southern Railway Company, for 20 miles of their railway from Pembroke to Golden Lake, in the province of Ontario ;
- 390.** To the Ontario and Rainy River Railway Company, for 80 miles of their railway from the Port Arthur, Duluth and Western Railway to Rainy Lake, in the province of Ontario ;
- 391.** To the Strathroy and Western Counties Railway Company, for 7 miles of their railway, commencing at a point at or near Caradoc Station on the Canadian Pacific Railway and extending to the town of Strathroy ;
- 392.** To the Phillipsburg Railway and Quarry Company, for $\frac{6}{100}$ mile of their railway from the end of the subsidized section to the government wharf at Phillipsburg ;
- 393.** To the United Counties Railway Company, for 1 mile of their railway from Johnson to St. Grégoire Station, in the province of Quebec ;
- 394.** To the St. Lawrence and Adirondack Railway Company, for $13\frac{1}{2}$ miles of their railway from Beauharnois to Caughnawaga, in the province of Quebec ;
- 395.** To the East Richelieu Valley Railway Company, for 24 miles of their railway from Iberville to St. Thomas, boundary of Missisquoi County, in the province of Quebec ;
- 396.** To the Portage du Fort and Bristol Branch Railway Company, for 15 miles of their railway to a point at or near Shawville, in the county of Pontiac ;
- 397.** For a railway from a point at or near Windsor Junction, on the Intercolonial Railway, to Upper Musquodoboit, for a distance of 40 miles ;
- 398.** To the St. Stephens and Milltown Railway Company, for $1\frac{1}{100}$ mile of their railway from Milltown to St. Stephen, in the province of New Brunswick ;
- 399.** For a railway from Sunny Brae to Country Harbour, and from a point at or near Country Harbour Cross Roads to Guysboro', in the province of Nova Scotia, a distance of 65 miles ;
- 400.** For a railway from Port Hawkesbury, Nova Scotia, to Port Hood and Broad Cove, 53 miles, in lieu of the subsidy granted by chapter 4 of 1894 ;
- 401.** For a railway from a point on the Central Railway in the county of Lunenburg, Nova Scotia, to the town of Liverpool, via the village of Caledonia, or to the village of Caledonia via Liverpool, or for any part thereof, the whole distance not exceeding 62 miles ;
- 402.** For a railway from Indian Garden on the line of the Central Railway, to Shelburne, in the province of Nova Scotia, a distance of 35 miles ;
- 403.** To the Coast Railway Company of Nova Scotia, for 61 miles of their railway from Yarmouth to Port Clyde, in the province of Nova Scotia ;
- 404.** For a railway from Brookfield Station on the Intercolonial Railway to Eastville, 30 miles

9-10 EDWARD VII., A. 1910

- 405.** To the Great Northern Railway Company, for 35 miles of their railway from St. Jérôme, in the province of Quebec, to Hawkesbury, in the province of Ontario;
- 406.** To the Drummond County Railway Company, for 42½ miles of their railway from Moose Park to Chaudière River, provided that the amount of the said subsidy shall be refunded to the Government of Canada in the event of the company's railway from Ste. Rosalie to Chaudière River being purchased or leased for a term of years by the government.

3. The Governor in Council may grant the subsidies hereinafter mentioned to the railway companies and towards the construction of the railways also hereinafter mentioned, that is to say :—

- 407.** To the Great Northern Railway Company, for 67 miles of their railway between Montcalm and its junction with the Lower Laurentian Railway near St. Tite, in the vicinity of the St. Maurice River, the balance remaining unpaid of the subsidies granted by chapter 2 of 1893, and by chapter 4 of 1894, between these points, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....\$ 182,400 00
- 408.** To the Pontiac Pacific Junction Railway Company, for 85 miles of their railway from Aylmer to Pembroke, also for bridging the Ottawa River, the balance remaining unpaid of the subsidy granted by chapter 8 of 1884, and by chapter 4 of 1894, not exceeding..... 114,272 00
- 409.** To the Ottawa and Gatineau Railway Company, for 62 miles of their railway from Hull towards Désert, in the province of Quebec, the balance remaining unpaid of the subsidy granted by chapter 2 of 1893, not exceeding in the whole..... 35,872 00
- 410.** To the Grand Trunk Railway Company of Canada, for a subsidy towards the rebuilding and enlargement of the Victoria Bridge at Montreal over the St. Lawrence River, 15 per cent upon the amount expended thereon, not exceeding..... 300,000 00
- 411.** To the Montfort Colonization Railway Company, for 33 miles of their railway from Montfort Junction to Arundel, in the province of Quebec, a subsidy not exceeding \$2,000 per mile, nor exceeding in the whole..... 66,000 00
- 412.** To the Irondale, Bancroft and Ottawa Railway Company, the balance remaining unpaid of the subsidy for the last five miles of the company's railway; the eastern terminus to be either at the village of Bancroft or at some point near the Hastings Road, in the township of Herschell, in lieu of the subsidy granted by chapter 2 of 1893, not exceeding in the whole..... 16,000 00
- 413.** To the Great Northern Railway Company, towards the construction of a railway bridge over the Ottawa River at Hawkesbury, 15 per cent upon the amount expended thereon, not exceeding..... 52,500 00
- 414.** For a railway and traffic bridge over the Ottawa River at Nepean Point, between the city of Ottawa and the city of Hull, 15 per cent upon the amount expended thereon, not exceeding..... 112,500 00

4. The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as are approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and

SESSIONAL PAPER No. 20

upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council.

5. The granting of such subsidies respectively shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

6. The said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized—except as to subsidies with respect of which it is hereinbefore otherwise provided.

7. Any company receiving a subsidy as aforesaid, in excess of \$3,200 per mile, shall be bound to carry Her Majesty's mails for a term of ten years free of charge over the portion of railway subsidized.

By the Special Act 60-61 Victoria, Chapter 5, 1897. (*Assented to 29th June, 1897.*)

1. Subject to the conditions hereinafter mentioned, the Governor in Council may grant to the Canadian Pacific Railway Company a subsidy towards the construction of a railway from Lethbridge, in the district of Alberta, through the Crow's Nest Pass to Nelson, in the province of British Columbia (which railway is hereinafter called "the Crow's Nest Line,") to the extent of eleven thousand dollars per mile thereof, and not exceeding in the whole the sum of three million six hundred and thirty thousand dollars, payable by instalments on the completion of each of the several sections of the said railway of the length respectively of not less than ten miles, and the remainder on the completion of the whole of the said railway; provided that an agreement between the Government and the company is first entered into in such form as the Governor in Council thinks fit, containing covenants to the following effect, that is to say:—

On the part of the company:

(a.) That the company will construct or cause to be constructed, the said railway upon such route and according to such descriptions and specifications and within such time or times as are provided for in the said agreement, and, when completed, will operate the said railway for ever;

(b.) That the said line of railway shall be constructed through the town of Macleod, and a station shall be established therein, unless the Governor in Council is satisfied by the company that there is good cause for constructing the railway outside the limits of the said town, in which case the said line of railway shall be located and a station established at a distance not greater than five hundred yards from the limits of the said town;

(c.) That so soon as the said railway is opened for traffic to Kootenay Lake, the local rates and tolls on the railway and on any other railway used in connection therewith and now or hereafter owned or leased by or operated on account of the company south of the company's main line in British Columbia, as well as the rates and tolls between any point on any such line or lines of railway and any point on the main line of the company throughout Canada, or any other railway owned or leased by or operated on account of the company, including its lines of steamers in British Columbia, shall be first approved by the Governor in Council or by a railway commission, if and when such commission is established by law, and shall at all times thereafter and from time to time be subject to revision and control in the manner aforesaid;

(d.) That a reduction shall be made in the general rates and tolls of the company as now charged, or as contained in its present freight tariff, whichever rates are now the lowest, for carloads or otherwise, upon the classes of merchandise hereinafter mentioned, westbound, from and including Fort William and all points east of Fort

9-10 EDWARD VII., A. 1910

William on the company's railway to all points west of Fort William on the company's main line, or on any line of railway throughout Canada owned or leased by or operated on account of the company, whether the shipment is by all rail line or by lake and rail, such reduction to be to the extent of the following percentages respectively, namely :—

- Upon all green and fresh fruits, 33½ per cent ;
- Coal oil, 20 per cent ;
- Cordage and binder twine, 10 per cent ;
- Agricultural implements of all kinds, set up or in parts, 10 per cent ;
- Iron, including bar, band, Canada plates, galvanized, sheet, pipe, pipe-fittings, nails, spikes and horse shoes, 10 per cent ;
- All kinds of wire, 10 per cent ;
- Window glass, 10 per cent ;
- Paper for building and roofing purposes, 10 per cent ; *
- Roofing felt, box and packing, 10 per cent ;
- Paints of all kinds and oils, 10 per cent ;
- Live stock, 10 per cent ;
- Wooden ware, 10 per cent ;
- Household furniture, 10 per cent ;

And that no higher rates than such reduced rates or tolls shall be hereafter charged by the company upon any such merchandise carried by the company between the points aforesaid ; such reductions to take effect on or before the first of January, one thousand eight hundred and ninety-eight ;

(e.) That there shall be a reduction in the company's present rates and tolls on grain and flour from all points on its main line, branches or connections, west of Fort William to Fort William and Port Arthur and all points east, of three cents per one hundred pounds, to take effect in the following manner :—One and one-half cent per one hundred pounds on or before the first day of September, one thousand eight hundred and ninety-eight, and an additional one and one-half cent per one hundred pounds on or before the first day of September, one thousand eight hundred and ninety-nine ; and that no higher rates than such reduced rates or tolls shall be charged after the dates mentioned on such merchandise from the points aforesaid ;

(f.) That the Railway Committee of the Privy Council may grant running powers over the said line of railway and all its branches and connections, or any portions thereof, and all lines of railway now or hereafter owned or leased by or operated on account of the company in British Columbia south of the company's main line of railway, and the necessary use of its tracks, stations and station grounds, to any other railway company applying for such grant upon such terms as such committee may fix and determine, and according to the provisions of The Railway Act and of such other general Acts relating to railways as are from time to time passed by Parliament ; but nothing herein shall be held to imply that such running powers might not be so granted without the special provision herein contained ;

(g.) That the said railway, when constructed, together with that portion of the company's railway from Dunmore to Lethbridge, and all lines of railway, branches, connections and extensions in British Columbia south of the main line of the company in British Columbia shall be subject to the provisions of The Railway Act and of such other general Acts relating to railways as are from time to time passed by Parliament ;

(h.) That if the company or any other company with whom it shall have any arrangement on the subject shall, by constructing the said railway or any part of it, as stipulated for in the said agreement, become entitled to and shall get any land as a subsidy from the Government of British Columbia, then such lands, excepting therefrom those which in the opinion of the Director of the Geological Survey of Canada (expressed in writing) are coal-bearing lands, shall be disposed of by the company or by such other company to the public according to regulations and at prices not exceeding these prescribed from time to time by the Governor in Council, having regard to the then existing provincial regulations applicable thereto ; the expression "lands" including all mineral and timber thereon which shall be disposed of as aforesaid, either with or without the land, as the Governor in Council may direct :

SESSIONAL PAPER No. 20

(i.) That if the company or any other company with whom it shall have any arrangement on the subject shall, by constructing the said railway or any part of it as stipulated for in the said agreement, become entitled to and shall get any lands as a subsidy from the Government of British Columbia which in the opinion of the Director of the Geological Survey of Canada (expressed in writing) are coal-bearing lands, then the company will cause to be conveyed to the Crown, in the interest of Canada, a portion thereof to the extent of fifty thousand acres, the same to be of equal value per acre as coal lands with the residue of such lands. The said fifty thousand acres to be selected by the Government in such fair and equitable manner as may be determined by the Governor in Council, and to be thereafter held or disposed of or otherwise dealt with by the Government as it may think fit on such conditions, if any, as may be prescribed by the Governor in Council, for the purpose of securing a sufficient and suitable supply of coal to the public at reasonable prices, not exceeding two dollars per ton of two thousand pounds free on board cars at the mines.

And on the part of the Government, to pay the said subsidy by instalments as aforesaid.

2. The company shall be bound to carry out in all respects the said agreement, and may do whatever is necessary for that purpose.

3. In order to facilitate such financial arrangements as will enable the company to complete the railway as aforesaid without delay and to acquire and consolidate with it the railway from Dunmore to Lethbridge, hereinafter called "the Alberta Branch," which, under the authority of chapter thirty-eight of the statutes of 1893, it now operates as lessee, and is under covenant to purchase, the company may issue bonds which will be a first lien and charge and be secured exclusively upon the said Alberta Branch and Crow's Nest Line together in the same way and with the same effect as if both the said pieces of railway to be so consolidated were being built by the company as one branch of its railway within the meaning of section one of chapter fifty-one of the statutes of 1888, and that section shall apply accordingly, such first lien to be subject to the payment of the purchase money of the Alberta Branch, as provided for in the said covenant to purchase.

By the Act 62-63 Vic., chapter 7 (*Assented to 11th August, 1899*).

1. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway, nor the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

415. To the Central Ontario Railway Company, for an extension of their railway from, or from near, either Coe Hill or Rathbun Station on the company's railway to, or near to Bancroft, not exceeding 21 miles, in lieu of the subsidy granted by chapter 5 of 1892;

9-10 EDWARD VII., A. 1910

416. To the Great Northern Railway Company, for a railway between Montcalm and St. Tite Junction, on the Lower Laurentian Railway, Quebec, not exceeding $53\frac{1}{2}$ miles; and for a branch from their main line to Shawenegan Falls, Quebec, not exceeding $6\frac{1}{2}$ miles.
417. To the Phillipsburg Railway and Quarry Company, shortage in the extension of their railway from a point on the company's line at or near the end of the subsidized section, to the government wharf at Phillipsburg, Quebec, not exceeding $\frac{6.6}{100}$ of a mile;
418. To the Strathroy and Western Counties Railway Company, for a line from Strathroy, Ontario, via Adelaide and Arkona, to either Forest, Tedford, or Park Hill, not exceeding 24 miles, in lieu of the subsidy granted by chapter 4 of 1894;
419. To the St. John Valley and Rivière du Loup Railway Company, for a line of railway from Fredericton, in the county of York, New Brunswick, to Woodstock, in the county of Carleton, not exceeding 59 miles;
420. For a railway from Port Hawkesbury, on the Strait of Canso, Nova Scotia, to St. Peter's, not exceeding thirty miles;
421. For a railway from Windsor, Nova Scotia, to Truro, via the township of Clifton, not exceeding 58 miles, in lieu of the subsidy granted by chapter 4 of 1894;
422. For a railway from a point at or near Brookfield Station, Nova Scotia, on the Intercolonial Railway, to Eastville, not exceeding 25 miles, in lieu of the subsidy granted by chapter 4 of 1897;
423. For a railway from Cross Creek Station, on the Canada Eastern Railway, to Stanley Village, New Brunswick, not exceeding 6 miles;
424. For a railway from the village of St. Rémi to Stottville or some point on the Delaware and Hudson Railway (Grand Trunk) in the parish of St. Paul de l'Île aux Noix, not exceeding 19 miles;
425. For a railway between Pontypool and Bobcaygeon, via Lindsay, Ontario, not exceeding 40 miles.
426. To the Pontiac Pacific Junction Railway Company, for a railway from Aylmer to Hull, Quebec, not exceeding 9 miles, in lieu of the subsidy granted by chapter 4 of 1897;
427. To the Portage du Fort and Bristol Branch Railway Company, for a branch line from a point on the Pontiac Pacific Junction Railway at or near the village of Quyon, towards the village of Portage du Fort, Quebec, not exceeding 15 miles, in lieu of the subsidy granted by chapter 4 of 1897;
428. To the Orford Mountain Railway Company, for a branch from their railway from a point between Lawrenceville and Eastman to Waterloo, not exceeding 13 miles;
429. To the Atlantic and Lake Superior Railway Company, for an extension of their railway from Caplin to Paspébiac, Quebec, not exceeding 30 miles;
430. To the United Counties Railway Company, for a railway from St. Robert Junction to Sorel, $6\frac{1}{2}$ miles, (this subsidy to be payable only in the event of adequate running rights over the South-eastern Railway between the two points above mentioned not being granted to the first mentioned Company on terms to be approved by the Railway Committee of the Privy Council,) and from Mount Johnson to St. Grégoire Station, 1 mile, not exceeding $7\frac{1}{2}$ miles.
431. For a railway from a point on the Central Railway in the county of Lunenburg, Nova Scotia, to the town of Liverpool, via the village of Caledonia, or to the village of Caledonia, via Liverpool, or for any part thereof, the whole distance not exceeding 62 miles;
432. For a railway from Indian Gardens, Queen's County, Nova Scotia, to Shelburne, in the said province, a distance of 35 miles;
433. The subsidy which the Ontario and Rainy River Railway Company is entitled to receive under chapter 4 of 1897, shall be \$6,400 per mile for the 80 miles mentioned in the said Act; not exceeding in all \$512,000.

SESSIONAL PAPER No. 20

- 434.** To the Bay of Quinté Railway Company, for such extensions, branches or additions to their system as will enable the said Company to connect their lines of railway or connecting lines with iron or other mines or mineral or wood lands in the counties of Peterborough, Northumberland, Hastings, Lennox and Addington, Frontenac or Leeds, payable in instalments regulated by the length of each of the said extensions or branches or additions, as the case may be, in lieu of part of the balance remaining unpaid of the subsidy granted to the Kingston, Napanee and Western Railway Company, by chapter 5 of 1892, but not exceeding \$3,200 per mile for 10 miles, nor exceeding in the whole \$32,000 ;
- 435.** To the Quebec and Lake St. John Railway Company, for 12 miles of their railway from the end of their line at deep water on the Chicoutimi branch of their railway, to Ha Ha Bay, in the lieu of the subsidy for the 12 miles granted by chapter 4 of 1894 ;
- 436.** For a line of railway from Hawkesbury, Ontario, to South Indian, not exceeding 35 miles ;
- 437.** For a railway from Sault Ste. Marie, Ontario, towards Michipicoten River and harbour and towards the main line of the Canadian Pacific Railway, not exceeding 40 miles ;
- 438.** For a branch line of railway from the main line of the Ottawa, Arnprior and Parry Sound Railway to the town of Parry Sound, Ontario, not exceeding 5 miles ;
- 439.** For a railway from the village of Haliburton, via the village of Whitney, towards the town of Mattawa, Ontario, not exceeding 20 miles ;
- 440.** For an extension of the Tilsonburg, Lake Erie and Pacific Railway, from Tilsonburg to Ingersoll or Woodstock, Ontario, not exceeding 28 miles ;
- 441.** To the South Shore Railway Company, from Sorel Junction along the South Shore to Lotbinière, Quebec, a distance not exceeding 82 miles ;
- 442.** To the Massawippi Valley Railway Company for an extension of their railway to the village of Stanstead Plain, Quebec, not exceeding $2\frac{1}{2}$ miles ;
- 443.** For a railway from Port Hawkesbury on the Strait of Canso, to Caribou Cove, Nova Scotia, a distance of 10 miles ;
- 444.** For a railway from Fort Frances, Ontario, westerly to a point at or near the mouth of Rainy River, a distance not exceeding 70 miles ;
- 445.** To the Central Railway Company of New Brunswick, for an extension of their line of railway from Newcastle Coal Fields to Gibson, New Brunswick, not exceeding 30 miles ;
- 446.** To the Canadian Northern Railway Company, for a railway from a point on the present line of the Winnipeg Great Northern Railway north of Swan River to Prince Albert, North-west Territories, not exceeding 100 miles ;
- 447.** For a railway from some point near Antler Station to a point near Moose Mountain, Manitoba, not exceeding 50 miles ;
- 448.** For a railway from Sunnybrae to Country Harbour, and from a point at or near Country Harbour Cross Roads to Guysborough, Nova Scotia, to make up the deficiency in mileage between points mentioned and subsidized by chapter 4 of 1897, additional mileage not exceeding 15 miles ;
- 449.** For a railway from Port Clyde towards Lockeport, in the province of Nova Scotia, not exceeding 20 miles ;
- 450.** For a railway from a point on the Intercolonial Railway at or near Halifax towards the Central Railway in the county of Lunenburg, not exceeding 20 miles ;
- 451.** For a railway from Labelle, in the province of Quebec, in a north-westerly direction, to Nominiguc, via Notre Dame de l'Annonciation, a distance not exceeding 22 miles ;
- 452.** For a railway from Owen Sound, in the province of Ontario, to Meaford, not exceeding 21 miles ;
- 453.** To the Ottawa and Gatineau Railway Company, for their line of railway in and through the city of Hull, Quebec, not exceeding 4 miles ;

9-10 EDWARD VII., A. 1910

- 454.** To the Western Alberta Railway Company, from a point on the United States boundary, west of Range 27, north-westerly towards Anthracite, in the district of Alberta, not exceeding 50 miles ;
- 455.** To the Edmonton, Yukon and Pacific Railway Company, for a railway from the town of South Edmonton, North-west Territories, to North Edmonton, and thence westerly towards the Yellow Head Pass, a distance not exceeding 50 miles ;
- 456.** To the Restigouche and Western Railway Company, in addition to the 20 miles subsidized by chapter 4 of 1897, and in continuation from the westerly end of the said 20 miles towards the St. John River, a further distance not exceeding 15 miles, and for the company's railway from a point on the St. John River, New Brunswick, at or near Grand Falls, or St. Leonard, or between Grand Falls and St. Leonard, and extending easterly towards Campbellton, such point to be approved by the Governor in Council, a distance of 12 miles ; in all not exceeding 27 miles ;
- 457.** For a railway in extension of the St. Francis branch of the Temiscouata Railway to the mouth of the St. Francis River, a distance not exceeding 3 miles ;
- 458.** To the Canada Eastern Railway Company, for a line of railway from Nelson, New Brunswick, to connect with the company's main line running into Chatham, to complete the connection from Nelson to such main line, not exceeding in the whole $2\frac{1}{2}$ miles ;
- 459.** To the Bay of Quinté Railway Company, for an extension of their line in a westerly direction from a point at or near Richmond boundary road near Deseronto for a distance not exceeding 2 miles ; also for an extension of their line from its present terminus at Tweed in a northerly direction for a distance of 2 miles, and for an extension of their line from the end of the last 2 miles mentioned in a northerly direction for a distance not exceeding 3 miles—in all 7 miles ; subsidies payable on each of the sections mentioned as each of such sections is completed ;
- 460.** To the Ontario, Belmont and Northern Railway Company, for an extension of their railway from its present terminus at Iron Mines in a north-westerly direction, a distance not exceeding 5 miles ; and also for an extension of the company's railway southerly, from the present southern terminus thereof to the Central Ontario Junction of the Canadian Pacific Railway, a distance not exceeding 2 miles ; but the last mentioned aid for the said 2 miles of railway shall not be granted in case the Railway Committee of the Privy Council finds that adequate running powers on fair terms can be secured to the company over that portion of the line of the Central Ontario Railway between the present southerly end of the Ontario, Belmont and Northern Railway and the Canadian Pacific Railway Company's line at Central Ontario Junction ; subsidies payable on each of the sections mentioned as each of such sections is completed ;
- 461.** For a line of railway from a point on the Pembroke Southern Railway at or near Golden Lake, Ontario, towards a point on the Irondale, Bancroft and Ottawa Railway at or near Bancroft, not exceeding 20 miles ;
- 462.** For a line of railway from Paspebiac, Quebec, to Gaspé in the said province, a distance not exceeding 82 miles ;
- 463.** To the Lake Erie and Detroit River Railway Company, for a line of railway from Ridgelytown, Ontario, to St. Thomas, in the said province, a distance not exceeding 44 miles ; this subsidy to be payable only in the event of adequate running rights over the Canada Southern Railway between the two points above mentioned not being granted to the first mentioned company on terms to be approved by the Railway Committee of the Privy Council ;
- 464.** To the Kingston and Pembroke Railway Company, for the construction of branches from the Company's main line to the iron mine at Bluff Point and to the Martele mine in the county of Renfrew, not exceeding 5 miles ;

SESSIONAL PAPER No. 20

465. For a railway from the town of Parry Sound extending northerly towards Sudbury, a distance not exceeding 20 miles.

3. The Governor in Council may grant the subsidies hereinafter mentioned towards the construction of the railways also hereinafter mentioned, that is to say :—

466. The Ontario and Rainy River Railway Company, for a railway from a point 80 miles west of Stanley Station, on the Port Arthur, Duluth and Western Railway, to Fort Frances, for a distance of 140 miles, at \$6,400 per mile, not exceeding in the whole	\$ 896,000 00
467. To the Quebec Bridge Company, towards the construction of a railway bridge over the St. Lawrence River, at Chaudière Basin, near Quebec, one million dollars, 40 per cent of which amount may be paid on monthly progress estimates, approved by the Government engineers, of materials delivered and work done...	1,000,000 00
468. To the South Shore Railway Company, towards the restoration and renewal of the railway bridge over the Yamaska River at Yamaska, Quebec.....	50,000 00
469. Towards the construction of a bridge over the Richelieu River at Sorel, 15 per cent upon the amount expended thereon, not exceeding.....	35,000 00
470. Towards the construction of a bridge across the St. Francis River, 15 per cent of the amount expended thereon, not exceeding...	50,000 00
471. Towards the construction of a bridge across the Nicolet River, 15 per cent upon the amount expended thereon, not exceeding....	15,000 00
472. To the Midland Railway Company, Limited, towards the construction of a bridge across the Shubenacadie River, 15 per cent upon the amount expended thereon, not exceeding.....	33,750 00
473. To the Great Northern Railway Company, towards the construction of a bridge across the St. Maurice River, 15 per cent upon the amount expended thereon, not exceeding.....	16,425 00
474. Also towards the construction of a bridge across the Rivière du Loup, 15 per cent upon the amount expended thereon, not exceeding	15,000 00
475. Also towards the construction of a steel bridge and viaduct at the Maskinongé River, 15 per cent upon the amount expended thereon, not exceeding.....	15,000 00

4. The subsidies granted to the Ontario and Rainy River Railway Company, the Canadian Northern Railway Company and the Edmonton, Yukon and Pacific Railway Company are granted upon the condition, and, if received and paid under the authority of this Act to the above mentioned companies respectively, shall be received upon the condition, that the said companies shall not, nor shall any of them, at any time amalgamate with, or lease its line or lines to, any railway company other than those mentioned in this section, except as may be authorized by Parliament; nor shall any of the said railways be leased to or operated by any other company; nor shall any of the said companies make an agreement for a common fund or for pooling its receipts with any other railway company; and any such lease, amalgamation or agreement shall be absolutely void, excepting in so far as such agreement may extend to traffic or running arrangements which have been approved by the Governor in Council.

5. The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as are approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of

9-10 EDWARD VII., A. 1910

which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council.

6. The granting of such subsidies, and receipt thereof by the respective companies, shall be subject to the condition that the Governor in Council may at all times provide and secure to other companies such running powers, traffic arrangement and other lights as will afford to all railways connecting with those so subsidized reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the Governor in Council shall have absolute control at all times over the rates and tolls to be levied and imposed by any of the companies or upon any of the railways hereby subsidized.

7. The said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon the completion of the work subsidized—except as to subsidies with respect to which it is hereinbefore otherwise provided.

8. Every company receiving a subsidy under this Act, its successors or assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transportation for men, supplies, material and mails over the portion of its line in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars, properly equipped, for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the department of the Government for which such service is being performed and the company performing it, and in case of disagreement, then at such rates as are approved by the Governor in Council, and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of subsidy received by the company under this Act.

9. As respects all railways for which subsidies are granted by this Act, the company at any time owning or operating any of the said railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers showing the cost of constructing the railway, the cost of operating it, and the earnings thereof.

By the Act 63-64 Vic., chapter 8 (*Assented to July 18, 1900*).

1. In this Act, unless the context otherwise requires, the expression 'cost' means the actual, necessary and reasonable cost and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway nor the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his

SESSIONAL PAPER No. 20

opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 permile, such subsidy not exceeding in the whole the sum of \$6,400 per mile :—

- 476. For a railway from a point at or near the junction of the Irondale, Bancroft and Ottawa Railway and the Grand Trunk Railway to the village of Minden, in the county of Haliburton, Ontario, not exceeding 12 miles.
- 477. To the Strathroy and Western Counties Railway Company, for a railway commencing at a point at or near Caradoc station, on the Canadian Pacific Railway, and extending to the town of Strathroy, Ontario, not exceeding 7 miles.
- 478. For a line of railway from a point on the Pembroke Southern Railway at or near Golden Lake, towards a point on the Irondale, Bancroft and Ottawa Railway at or near Bancroft, Ontario, for the further extension of such railway westerly from the western terminus of the 20 miles subsidized by chapter 4 of 1897, for a distance not exceeding 20 miles.
- 479. To the Algoma Central Railway Company for 25 miles of its line of railway from its terminus at Michipicoten Harbour, Lake Superior, towards the main line of the Canadian Pacific Railway, and for a further extension of this company's line of railway from Sault Ste. Marie towards Michipicoten River and Harbour, Ontario, towards the main line of the Canadian Pacific Railway, 25 miles in all, not exceeding 50 miles.
- 480. To the Central Ontario Railway Company, for a further extension of their railway from, at or near Bancroft to a point on the Canada Atlantic Railway between Whitney and Barry's Bay, Ontario, not exceeding 20 miles.
- 481. To the Manitoulin and North Shore Railway Company, for a line of railway between Little Current, on Manitoulin Island, and Sudbury, Ontario, on the Canadian Pacific Railway, the company undertaking to bridge between Little Current and the main land, the bridge to be so constructed and maintained as to afford suitable facilities, in the opinion of the Minister of Railways and Canals, for free vehicular and passenger traffic, the same as upon a public highway, the work to be begun and prosecuted from Little Current and Sudbury, one-half of the subsidy to be applicable, as earned, in respect of the work beginning at Little Current and carried on towards Sudbury, and one-half thereof to be applicable, as earned, in respect of the work beginning at Sudbury and carried on towards Little Current, the course of the line of railway to cross the Sault Ste. Marie branch of the Canadian Pacific Railway, not exceeding 66 miles.
- 482. For a railway from Bracebridge, in Muskoka, to a point at or near Baysville, Ontario, not exceeding 15 miles.
- 483. For a railway beginning at a point northerly 20 miles from Parry Sound, and extending from that point to the French River, Ontario, not exceeding 35 miles.
- 484. For a railway from a point 20 miles north-easterly from the village of Haliburton, via the village of Whitney, towards the village of Mattawa, Ontario, not exceeding 40 miles.
- 485. To the Kingston and Pembroke Railway Company, for a branch line of railway to iron mines in Bedford township, Ontario, not exceeding 12 miles.
- 486. To the Thousand Islands Railway Company for an extension of their railway from the present northerly terminus to a point easterly thereof, not exceeding 2 miles;

9-10 EDWARD VII., A. 1910

And also for an extension from a point on the railway to connect their railway with the Brockville, Westport and Sault Ste. Marie Railway, the Bay of Quinté Railway, the Kingston, Smith's Falls and Ottawa Railway, or the waters of the Rideau Canal, the balance remaining of the subsidy granted by chapter 5 of 1892, not exceeding $9\frac{1}{2}$ miles.

487. For a railway from Dymont, on the Canadian Pacific Railway, to the New Klondike mining district, Ontario, not exceeding 7 miles.
488. To the Schomberg and Aurora Railway Company, for an extension of their line from its easterly terminus to a point at or near Bond's Lake, Ontario, not exceeding 4 miles.
489. To the Nipissing and James Bay Railway Company, for a railway from, at or near North Bay station, on the Canadian Pacific Railway, towards James Bay, or Lake Tamagaming, Ontario, not exceeding 20 miles.
490. In aid of the Ottawa and New York Railway Company's bridge over the St. Lawrence River, and for the Canadian portion of such bridge, a sum not exceeding \$90,000.
491. To the Grand Trunk Railway Company of Canada, towards the cost of the rebuilding and enlargement of the Victoria Bridge over the St. Lawrence River, Quebec, in addition to the amount received by the company on account of the subsidy granted by chapter 4 of 1897, viz: \$270,000, to make up the grant in aid of the undertaking to \$500,000, upon condition that the tolls upon the bridge for passenger and vehicular traffic shall be subject to the approval of the Governor in Council, a sum not exceeding \$230,000.
492. For a railway and traffic bridge over the Ottawa River at Nepean Point, between the city of Ottawa, Ontario, and the city of Hull, Quebec, upon condition that the bridge be so constructed as to provide suitable facilities, to the satisfaction of the Minister of Railways and Canals, for free vehicular and foot passenger traffic, the same as upon a public highway, in addition to the \$112,500 already granted,—and, notwithstanding anything in the said Act, the subsidy hereby granted, together with the grant of \$112,500 under chapter 4 of 1897, shall be paid upon the completion of the bridge and its approaches, upon the Chief Engineer's report of such completion, and the recommendation of the Minister,—a sum not exceeding \$100,000.
493. To the Canadian Northern Railway Company, in further extension of their railway north of Swan River towards Prince Albert, North-west Territories, in addition to the grant by chapter 7 of 1899, a further mileage not exceeding 100 miles.
494. For a railway from the westerly end of the Waskada branch of the Canadian Pacific Railway, Manitoba, further westward, not exceeding 20 miles.
495. For a railway from a point on the Alberta Railway and Coal Company's Railway towards Cardston, Alberta, N.W.T., for 30 miles of railway at \$2,500 per mile.
496. To the Kaslo and Lardo-Duncan Railway Company, for a railway from Duncan Lake towards Lardo or Arrow Lake, British Columbia, or from Lardo to Arrow Lake, not exceeding 30 miles.
497. To the Restigouche and Western Railway Company, for the company's railway, in addition to the 15 miles subsidized by chapter 7 of 1899, on the easterly section of the line, and in continuation from the westerly end of the said 15 miles, a further distance of 15 miles towards the St. John River; and for the said railway, in addition to the 12 miles subsidized by the said chapter on the westerly section of the said line, a further distance from the easterly end thereof of 15 miles, towards Campbellton, N.B., not exceeding 30 miles.
498. For a line of railway from St. Charles Junction on the Intercolonial Railway towards the St. Francis branch of the Temiscouata Railway, Quebec, not exceeding 45 miles, and from the mouth of the St. Francis River, N.B., westerly towards St. Charles Junction, 15 miles, in all not exceeding 60 miles.
499. For a line of railway from Bristol, in the county of Carleton, New Brunswick, on the Canadian Pacific Railway, easterly, a distance not exceeding 17 miles.

SESSIONAL PAPER No. 20

- 500.** For a line of railway from Shediac, county of Westmorland, New Brunswick, to Shemogue, and towards Cape Tormentine, in the said county, a distance not exceeding 38 miles.
- 501.** For a railway from Lockeport, Nova Scotia, to Sable River, or other convenient point of railway connection, not exceeding 20 miles.
- 502.** To the Inverness and Richmond Railway Company, for a railway in extension of the company's line northward from Broad Cove to Cheticamp, C.B., Nova Scotia, not exceeding 40 miles.
- 503.** For a railway from Bridgetown to Victoria Beach, Nova Scotia, not exceeding 30 miles.
- 504.** For a railway from a point on the Intercolonial Railway, Pietou branch, to Kempt Town, county of Colchester, Nova Scotia, not exceeding $4\frac{1}{2}$ miles.
- 505.** For a railway from Brazil Lake, on the Dominion Atlantic Railway, to Kemptville, Nova Scotia, not exceeding 11 miles.
- 506.** To the Montfort and Gatineau Colonization Railway Company, to enable it to extend its railway from Arundel to a point in the municipality of the united townships of Preston and Hartwell, province of Quebec, not exceeding 30 miles.
- 507.** To the Chateauguay and Northern Railway Company, for a railway from a point in Hochelaga ward, Montreal, to a point on the Great Northern Railway, in or near the town of Joliette, passing near the town of L'Assomption, Quebec, together with a spur into the said town, not exceeding 42 miles.
- 508.** To the Chateauguay and Northern Railway Company, for a single-track standard railway bridge, with two roadways 10 feet wide, for free vehicular and foot passenger traffic, the same as upon a public highway, from Bout L'Isle to Charlemagne, at the junction of the Ottawa and St. Lawrence rivers, \$150,000.
- 509.** To the Chateauguay and Northern Railway Company, towards the construction of a bridge across the Lac Ouareau River, \$15,000.
- 510.** To the Arthabaska Railway Company, for a railway from Victoriaville to West Chester, province of Quebec, a distance not exceeding 12 miles.
- 511.** To the Great Northern Railway Company, for a branch line from the town or from near the town of Joliette towards Ste. Emélie, touching the parishes of Ste. Beatrix and Ste. Jean de Matha, not exceeding 20 miles.
- 512.** For a railway from Farnham, province of Quebec, to Frelighsburg and the International Boundary Line, not exceeding 21 miles.
- 513.** Towards the construction of a railway bridge over the St. Francis River, in lieu of the grant under chapter 7 of 1899, at St. François du Lac, on the condition that the bridge, with approaches, be built so as to allow the municipalities to make use thereof, to establish and maintain a suitable roadway for the free passage of foot passengers, vehicles and animals, to be approved by the Minister of Railways and Canals, \$50,000.
- 514.** Towards the construction of a railway bridge over the Nicolet River at Nicolet, in lieu of the grant under chapter 7 of 1899, \$15,000.
- 515.** For a line of railway from Halifax towards a point on the Central Railway of Nova Scotia, in the county of Lunenburg, in addition to and in extension of the 20 miles subsidized by chapter 7 of 1899, not exceeding 20 miles.

3. The subsidies hereby granted and any subsidies heretofore granted under any Act of the Parliament of Canada, still in force, but not fully paid, towards the construction of any railway or bridge, shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless in this Act otherwise expressly provided, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows :

(a) upon the completion of the work subsidized ; or

(b.) by instalments on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work undertaken ; or

9-10 EDWARD VII., A. 1910

(c.) upon progress estimates on the certificate of the Chief Engineer of Railways and Canals, that in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than sixty thousand dollars; or

(d.) with respect to (b) and (c), part one way, part the other.

4. The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as are approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made in each case by the company with the government, which agreement the government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council.

5. The granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Governor in Council may at all times provide and secure to other companies such running powers, traffic arrangements and other rights as will afford to all railways connecting with those so subsidized reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the Governor in Council shall have absolute control at all times over the rates and tolls to be levied and imposed by any of the companies or upon any of the railways hereby subsidized.

6. The Governor in Council may make it a condition of the subsidies hereby granted, or of any heretofore granted by any Act of Parliament as to which a contract has not yet been entered into between Her Majesty and the company for the construction of the railway, that the company shall lay its road with new steel rails made in Canada, if such rails are procurable in Canada of suitable quality upon terms as favourable as other rails can be obtained upon, of which the Minister of Railways and Canals shall be the judge.

7. Every company receiving a subsidy under this Act, its successors or assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the government of Canada transportation for men, supplies, material and mails over the portion of its line in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars, properly equipped, for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the minister of the department of the government for which such service is being performed and the company performing it, and in case of disagreement then at such rates as are approved by the Governor in Council; and in or towards payment for such charges the government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of subsidy received by the company under this Act.

8. As respects all railways for which subsidies are granted by this Act, the company at any time owning or operating any of the said railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers showing the cost of constructing the railway, the cost of operating it, and the earnings thereof.

SESSIONAL PAPER No. 20

9. Paragraph 20 of section 2 of chapter 7 of the statutes of 1899 is amended by inserting after the word 'railway,' in the third line, the words 'or to connect the said lines.'

10. The subsidy provided for by chapter 7 of the statutes of 1899 towards the construction of a railway bridge over the St. Lawrence River at Chaudière Basin, near Quebec, shall be deemed to be applicable, as to one-third thereof, to the substructure and approaches, and as to two-thirds thereof to the superstructure, and the said subsidy may be paid upon that basis by authority of the Governor in Council, upon progress estimates to be furnished from time to time by the Chief Engineer of Government Railways and Canals, so that one-third of such subsidy, and no more, may be paid in respect of and upon completion of the masonry of the substructure and approaches of the said bridge, one-third, and no more, upon the work and material of one-half of the superstructure being done and supplied, in respect of such work and material, and the remaining one-third upon the completion of the whole work.

By the Act 1st Edward VII., chapter 7 (*Assented to May 23, 1901.*)

1. In this Act, unless the context otherwise requires, the expression 'cost' means the actual, necessary and reasonable cost, and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile;—

516. For a line of railway from a point on the Intercolonial Railway at or near New Glasgow to Country Harbour, Nova Scotia, and from a point at or near Country Harbour Cross Roads to Guysborough, in lieu of the subsidies granted by 1897, cap. 4, and 1899, cap. 7, sec. 2, paragraph 34, not exceeding 80 miles.

517. To the Quebec and New Brunswick Railway Company, for a line of railway from a point at or near St. Charles or at or near Chaudière Junction or a point on the Quebec Central Railway, near St. Anselme, Quebec, towards the present terminus of the St. Francis Branch of the Témiscouata Railway, New Brunswick, not exceeding 45 miles, and for a line of railway from the mouth of the St. Francis River, New Brunswick, westerly towards Chaudière Junction, not exceeding 15 miles, in lieu of the subsidy granted by 1900, cap. 8, sec. 2, paragraph 23; also for a line of railway in extension of the St. Francis Branch of the Témiscouata Railway to the mouth of the St. Francis River, New Brunswick, in lieu of the subsidy granted by 1899, cap. 7, sec. 2, paragraph 43, not exceeding 3 miles; in all not exceeding 63 miles.

9-10 EDWARD VII., A. 1910

- 518.** To the Montreal and Province Line Railway Company, for a line of railway from Farnham, Quebec, to Frelighsburg, in lieu of the subsidy granted by 1900, cap. 8, sec. 2, paragraph 37, not exceeding 19 miles.
- 519.** For a line of railway from a point on the Intercolonial Railway at or near Windsor Junction to Upper Musquodoboit, in lieu of 1897, cap. 4, sec. 2, paragraph 23, not exceeding 40 miles.
- 520.** For a line of railway from Pubnico, Nova Scotia, to Port Clyde or Clyde River, in lieu of the unexpended balance of subsidy granted by 1897, cap. 4, sec. 2, paragraph 29, not exceeding 31 miles.
- 521.** To the Toronto, Lindsay and Pembroke Railway Company, for a line of railway from the western terminus of the 20 miles subsidized by 1899, cap. 7, sec. 2, paragraph 47, westerly towards Bancroft, not exceeding 20 miles, in lieu of the subsidy granted by 1900, cap. 8, sec. 2, paragraph 3; also from the terminus of previously subsidized lines at a point about 40 miles west of Golden Lake, westerly to Bancroft, not exceeding 11 miles; in all not exceeding 31 miles.
- 522.** For a line of railway from Chipman Station, New Brunswick, to Gibson, in lieu of the subsidies granted by 1897, cap. 4, and 1899, cap. 7, sec. 2, paragraph 31, not exceeding 45 miles.
- 523.** To the Inverness and Richmond Railway Company, for a line of railway from a point at or near Point Tupper on the Intercolonial Railway, to Broad Cove and Cheticamp, Nova Scotia, in lieu of the subsidies granted by 1897, cap. 4, 1899, cap. 7, sec. 2, paragraph 29, and 1900, cap. 8, sec. 2, paragraph 27, not exceeding 98 miles.
- 524.** For a line of railway from Caplin to Paspebiac, Quebec, in lieu of the subsidy granted by 1899, cap. 7, sec. 2, paragraph 15, the subsidy contract to be entered into with the trustees or receivers under mortgage from the Atlantic and Lake Superior Railway Company, and to contain the conditions that the subsidy when earned shall be paid in the following manner:—
- 1st. To the Hamilton Bridge Works Company in payment for bridge superstructures on the said section of railway, when furnished and erected by that company, not to exceed \$35,000;
 - 2nd. For the completion of the road-bed and works incidental thereto;
 - 3rd. Towards payment of overdue balances, pro rata, in settlement of claims for labour, boarding-house claims, and material and supplies furnished in connection with the construction of the said section of railway; in all not exceeding 30 miles.
- 525.** To the Schomberg and Aurora Railway Company, for a line of railway from a point on the Grand Trunk Railway between King and Newmarket, Ontario, to Schomberg, in lieu of the subsidy granted by 1897, cap. 4, not exceeding 15 miles.
- 526.** To the Ottawa and Gatineau Railway Company, for a line of railway from the end of the 62nd mile subsidized, towards Désert, in lieu of the subsidy granted by 1897, cap. 4, sec. 2, paragraph 5, not exceeding 20 miles.
- 527.** To the Restigouche and Western Railway Company, for its line of railway from Campbellton on the Intercolonial Railway, New Brunswick, towards Grand Falls, in lieu of the subsidy granted by 1897, cap. 4, sec. 2, paragraph 10, not exceeding 20 miles.
- 528.** To the Pontiac Pacific Junction Railway Company, for 36 miles of its railway from a point at or near Shawville, crossing the Ottawa River via Calumet Island to Pembroke, including the bridging of both channels of the Ottawa River at Calumet Island, 14 miles of which shall be in lieu of the unexpended balance of subsidy granted by 1897, cap. 4, sec. 3, paragraph 2, not exceeding \$115,200.
- 529.** To the Manitoulin and North Shore Railway Company, for its line of railway, from a point on its line of railway between Sudbury and Little Current to its junction with the line of the Algoma Central and Hudson Bay Railway, at or

SESSIONAL PAPER No. 20

near Goulais River, in addition to and in further extension of its railway subsidized by 1900, cap. 8, sec. 2, paragraph 6, an additional mileage not exceeding 130 miles.

- 530.** For a line of railway from Grandique Ferry, Nova Scotia, to Arichat, not exceeding 8 miles.
- 531.** To the Central Ontario Railway Company, for a further extension of its line of railway, subsidized by 1900, cap. 8, sec. 2, paragraph 5, northward, to a junction with the Canada Atlantic Railway, at or near Whitney, Ontario, not exceeding 20 miles.
- 532.** To the Kingston and Pembroke Railway Company, for a line of railway from a point at or near Sharbot Lake, Ontario, via Lanark, to Carleton Place, not exceeding 41 miles.
- 533.** To the Norwood and Apsley Railway Company, for a line of railway from Norwood, Ontario, to the village of Apsley, not exceeding 30 miles.
- 534.** For a line of railway from a point on the Dominion Atlantic Railway at or near Wolfville, Nova Scotia, to the Government pier on the Basin of Minas, not exceeding one mile.
- 535.** To the Algoma Central and Hudson Bay Railway Company, for a line of railway from Sault Ste. Marie to a point on the Canadian Pacific Railway at or near White River, in the district of Algoma, in extension of the subsidy granted to the Algoma Central Railway by 1899, cap. 8, sec. 2, paragraph 23, and by 1900, cap. 8, sec. 2, paragraph 4, a further and additional mileage not exceeding 135 miles.
- 536.** For a line of railway from Bridgetown, Nova Scotia, to Middleton, in extension of the line subsidized by 1900, cap. 8, sec. 2, paragraph 28, not exceeding 11 miles.
- 537.** For a line of railway from a point on the Grand Trunk Railway at or near Burk's Falls, Ontario, to the Maganetawan River, not exceeding two miles.
- 538.** For a line of railway between Halifax and the Central Railway, Nova Scotia, from the end of the 40th mile from Halifax, subsidized by 1900, cap. 8, sec. 2, paragraph 40, to a junction with the Central Railway, Nova Scotia, not exceeding 30 miles.
- 539.** For a line of railway from a point on the Algoma branch of the Canadian Pacific Railway at or near Bruce Lake Station, northerly to a point at or near Rock Lake, in the district of Algoma, not exceeding 9 miles.
- 540.** For a line of railway from Roberval, Quebec, westward towards James Bay, not exceeding 60 miles.
- 541.** For a line of railway from a point upon the Stonewall branch or the Selkirk branch of the Canadian Pacific Railway to Icelandic River by way of Gimli, not exceeding 35 miles.
- 542.** To the Restigouche and Western Railway Company, for an extension of its line of railway from the 50th mile from Campbellton already subsidized, westward, to effect a junction with its line of railway subsidized 27 miles east from the St. John River, not exceeding 33 miles.
- 543.** For a line of railway from Duncan Lake towards Lardo or Arrow Lake, British Columbia, or from Lardo to Arrow Lake, in lieu of the subsidy granted by 1900, cap. 8, sec. 2, paragraph 21, not exceeding 30 miles.

3. The Governor in Council may grant to the Ottawa and Gatineau Railway, for its unearned balance of subsidy upon the 62 miles of its line of railway from Hull towards Désert, granted by 1897, chap. 4, sec. 3, paragraph 3, a sum not exceeding \$35,872.

4. The subsidies hereby authorized, and any subsidies heretofore authorized under any Act of Parliament of Canada still in force but not fully paid, towards the construction of any railway or bridge, shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided in this Act, at the option of the

9-10 EDWARD VII., A. 1910

Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows :—

- (a.) upon the completion of the work subsidized ; or
- (b.) by instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work undertaken ; or
- (c.) upon progress estimates on the certificate of the Chief Engineer of Government Railways, that, in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than sixty thousand dollars ; or
- (d.) with respect to (b.) and (c.), part one way, part the other.

5. The subsidy of 66 miles granted to the Manitoulin and North Shore Railway Company for a line of railway between Little Current, on Manitoulin Island, and Sudbury, Ontario, by paragraph 6 of section 2 of chapter 8 of the statutes of 1900, may be contracted for with the company and paid, and the work may be begun and prosecuted in two sections, the first beginning at or near Victoria Mines, in the township of Denison, and extending to Sudbury, and thence north-easterly towards Lake Wahnapiatē, not exceeding 33 miles ; the second section beginning at Little Current and extending to and connecting with the Canadian Pacific Railway at or near Stanley, in the township of Baldwin, on the Canadian Pacific Railway, not exceeding 31 miles ; subject, however, to the company carrying out the undertaking contained in paragraph 6 of section 2 of chapter 8 of the statutes of 1900.

6. The subsidies hereinbefore authorized to be granted to companies named, shall, if granted by the Governor in Council, be granted to such companies respectively ; the other subsidies may be granted to such companies as establish to the satisfaction of the Governor in Council their ability to construct and complete the said railways respectively ; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1901, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed upon a location, and according to descriptions, conditions, and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make.

7. The granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Governor in Council may at all times provide and secure to other companies such running powers, traffic arrangements, and other rights, as will afford to all railways connecting with those so subsidized, reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways ; and the Governor in Council shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways hereby subsidized.

8. Every company receiving a subsidy under this Act, its successors and assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transportation for men, supplies, materials and mails over the portion of the line in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars properly equipped for such mail service ; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the Department of the Government for which such service is being performed and the company performing it, and, in case of disagreement, then at such rates as are approved by the Governor in Council ; and in or towards payment for such charges the Government of Canada shall

SESSIONAL PAPER No. 20

be credited by the company with a sum equal to three per cent per annum on the amount of the subsidy received by the company under this Act.

9. As respects all railways for which subsidies are granted by this Act, the company at any time owning or operating any of the railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers, showing the cost of constructing the railway, the cost of operating it, and the earnings thereof.

10. The Governor in Council may make it a condition of the grant of the subsidies herein provided, or any heretofore authorized by any Act of Parliament as to which a contract has not yet been entered into with the company for the construction of the railway, that the company shall lay its road with new steel rails, made in Canada, if they are procurable in Canada of suitable quality, upon terms as favourable as other rails can be obtained, of which the Minister of Railways and Canals shall be the judge.

By the Act 3rd Edward VII., chap. 57 (assented to 24th October, 1903.)

1. In this Act, unless the context otherwise requires, the expression 'cost' means the actual, necessary and reasonable cost and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

- 544.** To the Tilsonburg, Lake Erie and Pacific Railway Company, for a line of railway from the present terminus at Ingersoll to Woodstock, not exceeding 9 miles, in lieu of the subsidy granted by item 26 of section 2 of chapter 7 of 1899.
- 545.** To the Lindsay, Bobcaygeon and Pontypool Railway Company, for a line of railway from Burketon to Bobcaygeon, not exceeding 40 miles, in lieu of the subsidy granted by item 11 of section 2 of chapter 7 of 1899.
- 546.** To the Toronto, Lindsay and Pembroke Railway Company, for a line of railway from Golden Lake to Bancroft, not exceeding 51 miles, in lieu of the subsidy granted by item 6 of section 2 of chapter 7, 1901.
- 547.** To the Central Ontario Railway, for a further extension of its railway from a point at or near Bancroft to a point on the Canada Atlantic Railway at or near Whitney, not exceeding 40 miles, in lieu of the subsidies granted by item 5 of section 2 of chapter 8 of 1900, and item 16 of section 2 of chapter 7 of 1901, respectively.

9-10 EDWARD VII., A. 1910

- 548.** To the Strathroy and Western Counties Railway Company, for a line of railway from a point at Lambeth to Strathroy, via the villages of Delaware, Mount Brydges and Caradoc Station on the Canadian Pacific Railway, and from Strathroy northerly to Forest, Thedford or Parkhill, not exceeding in all 31 miles, in lieu of subsidies granted by item 4 of section 2 of chapter 7, 1899, and item 2 of section 2 of chapter 8 of 1900, respectively.
- 549.** To the Montfort and Gatineau Colonization Railway Company, to extend its railway from Arundel to a point in the municipality of the united townships of Preston and Hartwell, not exceeding 30 miles, in lieu of the subsidy granted by item 31 of section 2 of chapter 8 of 1900.
- 550.** For a line of railway from Jonquières to La Baie des Ha Ha, not exceeding 20 miles, in lieu of the subsidy of 12 miles granted by item 21 of section 2 of chapter 7 of 1899.
- 551.** For a line of railway from Lime Ridge northerly through the county of Wolfe in the county of Megantic, not exceeding 50 miles, being a revote of the subsidy granted by chapter 4 of 1894.
- 552.** For a line of railway from Joliette to or near Lake Manuan, a distance not exceeding 60 miles, being a revote and in lieu of subsidies granted by chapter 4 of 1897 and chapter 8 of 1900.
- 553.** For a line of railway from St. Eustache to St. Placide in the county of Two Mountains, not to exceed 18 miles; from St. Eustache to Sault au Recollet, 12 miles; and from St. Placide to St. Andrews, 8 miles—not exceeding in all 38 miles; being a revote of subsidies granted by chapter 24 of 1887 and chapter 5 of 1892, respectively.
- 554.** For a line of railway from Roberval westward towards James Bay, not exceeding 60 miles, in lieu of the subsidy granted by item 25 of section 2 of chapter 7 of 1901.
- 556.** For a line of railway from Yamaska to Lotbinière, a distance not exceeding 70 miles, in lieu of the subsidy granted by item 27 of section 2 of chapter 7 of 1899.
- 557.** To the Ottawa, Northern and Western Railway Company, for that portion of its line from a point at the east end of the Hull station yard of the Canadian Pacific Railway to a point of junction with the Interprovincial Bridge approach in the city of Hull, not exceeding one mile; and for a line of railway to the boundary line of the city of Hull from a point on the Ottawa and Gatineau Railway, now the Ottawa, Northern and Western Railway, not exceeding one-quarter of a mile; in lieu of any balance of mileage subsidized by items 12 and 39 respectively of section 2 of chapter 7 of 1899.
- 558.** To the International Railway Company of New Brunswick (formerly the Restigouche and Western Railway Company), for a line of railway from the western end of the ten miles of its railway, as already constructed from Campbellton towards a point on the St. John River between Grand Falls and Edmundston, not exceeding 67 miles, being a revote, and in lieu of subsidies granted by chapter 4 of 1897, item 42 of section 2 of chapter 7 of 1899, and item 22 of section 2 of chapter 8 of 1900.
- 559.** For a line of railway from Woodstock to the International Boundary, not exceeding 26 miles, being a revote of the subsidy granted by chapter 4 of 1894.
- 560.** To the St. John Valley Railway Company, for a line of railway from a point on the Canadian Pacific Railway at or near Welsford or Westfield, or between the said two points, to Gagetown, not exceeding 30 miles, being a revote of the subsidy granted by chapter 4 of 1897.
- 561.** To the Shediac and Coast Railway Company, for a line of railway from Shediac to Shemogue and towards Cape Tormentine, in Westmoreland County, not exceeding 38 miles, in lieu of the subsidy granted by item 25 of section 2 of chapter 8 of 1900.

SESSIONAL PAPER No. 20

- 562.** To the Mabou and Gulf Railway Company, Limited, for a line of railway from Mabou Coal Mines to a point at or near Glendyer, thence to Orangedale on the Intercolonial Railway, not exceeding 34 miles, a revote of the subsidy granted by chapter 4 of 1894, and in substitution of the 25 miles subsidized thereby from Orangedale to Broad Cove.
- 563.** To the Nova Scotia Eastern Railway Company, Limited, for a line of railway from New Glasgow to Cross Roads, Country Harbour, thence to the town of Guysborough, and thence to the Strait of Canso; with a branch from Cross Roads, Country Harbour, aforesaid, down the Country Harbour River to the Deep Waters thereof, not exceeding 116 miles; in lieu of subsidies for 40 and 80 miles granted by items 4 and 1, respectively, of section 2 of chapter 7 of 1901.
- 564.** For a line of railway from Debert Station on the Intercolonial Railway to Debert Coal Mine, not exceeding $4\frac{1}{2}$ miles, in lieu of the subsidy granted by item 29 of section 2 of chapter 8 of 1900.
- 565.** For a line of railway from a point on the Joggins Railway near River Hebert Railway Bridge to the village of Minudie, not exceeding 6 miles, being a revote and in substitution of subsidy granted by chapter 4 of 1894.
- 566.** To the Middleton and Victoria Beach Railway Company, Limited, for a line of railway from Victoria Beach to Middleton, not exceeding 41 miles, in lieu of subsidies granted by item 28 of section 2 of chapter 8 of 1900, and by item 21 of section 2 of chapter 7 of 1901.
- 567.** To the Halifax and South-western Railway Company, for the following lines of railway:—
- (a.) A line of railway from a point at or near Halifax to a point on the Central Railway at or near Mahone Bay, not exceeding 68 miles.
 - (b.) A line of railway from a point on the Central Railway at or near Bridgewater towards Barrington Passage, not exceeding 77 miles.
 - (c.) A line of railway from a point at or near New Germany on the Central Railway to a point at or near Caledonia, not exceeding 22 miles.
 - (d.) A line of railway from a point at or near Caledonia to Liverpool, not exceeding 29 miles.
- The subsidies to the said lines of railway being granted in lieu of subsidies granted by items 17, 18, 35 and 36 of section 2 of chapter 7, 1899 by items 26 and 40 of section 2 of chapter 8 of 1900, and items 5 and 23 of section 2 of chapter 7 of 1901, respectively.
- 568.** To the Inverness Railway and Coal Company, formerly the Inverness and Richmond Railway Company, Limited, for 8 miles of railway between Point Tupper and Broad Cove; and for a line of railway not exceeding 37 miles, from Cheticamp to a point on the line already built between Broad Cove and Point Tupper, being a revote and in substitution of the subsidy granted by chapter 4 of 1897.
- 569.** For a line of railway from a point at or near Wolfville on the Dominion Atlantic Railway to the Government pier on the Basin of Minas, not exceeding one mile, in lieu of the subsidy granted by item 19 of section 2 of chapter 7 of 1901.
- 570.** To the Nicola, Kamloops and Similkameen Coal and Railway Company, for a line of railway from a point at or near Spence's Bridge on the Canadian Pacific Railway to Nicola Lake, not exceeding 45 miles, being a revote of subsidies granted by chapter 5 of 1892 and chapter 4 of 1894.
- 571.** For a line of railway from Winnipeg Beach or Teulon to a point on Icelandio River, by way of Gimli, not exceeding 35 miles, in lieu of the subsidy granted by item 26 of section 2 of chapter 7 of 1901.

9-10 EDWARD VII., A. 1910

- 572.** To the Edmonton, Yukon and Pacific Railway Company, for a line of railway from the town of Strathcona to Edmonton, and thence westerly towards the Yellow Head Pass, a distance not exceeding 50 miles, in lieu of the subsidy granted by item 41 of section 2 of chapter 7 of 1899.
- 573.** To the St. John Valley and Rivière du Loup Railway Company, for a line of railway from Fredericton to Woodstock, not exceeding 59 miles, in lieu of the subsidy granted by item 5 of section 2 of chapter 7 of 1899.
- 574.** For a line of railway from Hawkesbury, Ontario, to South Indian, not exceeding 35 miles, in lieu of the subsidy granted by item 22 of section 2 of chapter 7 of 1899.
- 575.** To the Tilsonburg, Lake Erie and Pacific Railway Company, for a line of railway from Woodstock northerly to a point on the Grand Trunk Railway at Berlin, or from Ingersoll to Stratford, or to any point on the Grand Trunk Railway between these places, not exceeding 35 miles, being in addition to and continuation of the 9 miles mentioned in item 1 of this section (544).
- 576.** To the Irondale, Bancroft and Ottawa Railway Company, for a line of railway from the present terminus of its railway, near Baptiste, easterly to a point at or near Renfrew, not exceeding 75 miles.
- 577.** To the Nepigon Railway Company, for a line of railway from Lake Superior to Lake Nepigon, and from a point on the north shore of Lake Nepigon northerly, not exceeding 80 miles.
- 578.** To the Manitoulin and North Shore Railway Company, for a line of railway from Little Current on its present line, to Sudbury, and thence towards the main line of the Canadian Pacific Railway Company, not exceeding 30 miles, in lieu of the subsidy for 21 miles granted by item 38 of section 2 of chapter 7 of 1899.
- 579.** To the Thunder Bay, Nepigon and St. Joe Railway Company, for a line of railway from Port Arthur north-easterly, not exceeding 50 miles.
- 580.** To the Timagami Railway Company, for a line of railway from a point at or near Sturgeon Falls in a north-westerly direction to a point on the westerly shore of Lake Timagami in the district of Nipissing, not exceeding 50 miles.
- 581.** To the Bay of Quinté Railway Company, for further extension of its line of railway, from the northern terminus thereof, commencing from a point at or near Aetiolite, thence in a north-westerly direction, via the villages of Queensboro' and Bannockburn, to a point in the township of Marmora or Lake in Hastings County, not exceeding 20 miles in all.
- 582.** To the Bruce Mines and Algoma Railway Company, for 21 miles from the end of its line, as subsidized by chapter 7 of 1901, northward, not exceeding 21 miles.
- 583.** To the James Bay Railway Company, for a line of railway from Toronto, via the east side of Lake Simcoe, to a point at, near, or beyond Sudbury, through Parry Sound, not exceeding 265 miles, in lieu of two subsidies granted by chapter 8 of 1900, for 35 and 20 miles, respectively, from Parry Sound towards James Bay.
- 584.** To the Quebec and Lake St. John Railway Company, for one mile of railway from Roberval to the Government wharf at Lake St. John.
- 585.** To the Montfort and Gatineau Colonization Railway Company, for the extension of its line of railway from Morin Flats to St. Jerome, to connect with the Great Northern Railway, not exceeding 22 miles.
- 586.** To the Interprovincial and James Bay Railway Company, for a line of railway from Lake Timiskaming at the present terminus of the Canadian Pacific Railway line, in a northerly direction, not to exceed 50 miles.
- 587.** For a line of railway from Waltham Station to Ferguson Point, in the county of Pontiac, not exceeding 20 miles.
- 588.** For a line of railway from Lake Nominigou to Le Lièvre, not exceeding 35 miles.

SESSIONAL PAPER No. 20

- 589.** For a line of railway in extension of the line from Lime Ridge into the county of Megantic to the bridge over the St. Lawrence at or near Quebec, not exceeding 30 miles.
- 590.** To the Quebec Central Railway Company, for an extension of its line of railway from St. François to St. George, not exceeding 9 miles; also for a railway from Scott Junction to the Quebec bridge, not exceeding 22 miles.
- 591.** For a line of railway from the station of Lac Bouchette on the Quebec and Lake St. John Railway to St. André, not exceeding 13 miles.
- 592.** For a line of railway from Quebec towards Seven Islands, including branches to Murray Bay and Baie St. Paul, not exceeding 200 miles.
- 593.** For a branch line from a point at or near the intersection of the Canadian Pacific Railway and the Great Northern Railway between St. Philippe d'Argenteuil and Lachute, thence in a northerly direction, passing through the village of Brownsburg, not exceeding 3 miles.
- 594.** To the Orford Mountain Railway Company, for a line of railway from a point on its main line between Lawrenceville and Eastman to Lake Bonella, 5 miles; from Kingsbury to Windsor Mills, 10 miles; and from Eastman to the town line between the township of Bolton, east part, and the township of Potton, 12 miles—not exceeding in the whole 27 miles.
- 595.** To the Atlantic, Quebec and Western Railway Company, for a line of railway from Gaspé to a point at or near Causapscau on the Intercolonial Railway, and from that point to Edmundston, not exceeding 260 miles; and for a line of railway from Paspebiac to Gaspé as near the shore as practicable, not exceeding 102 miles.
- 596.** For a line of railway, in addition to and in extension of the line mentioned in item 11 (554) of this section, from Roberval towards James Bay, not exceeding 40 miles.
- 597.** For a branch line from a point near the bridge at Trois Pistoles River on the Intercolonial Railway in a south-easterly direction to Mackenzie and Renouf Falls, on the Trois Pistoles River, not exceeding $2\frac{1}{2}$ miles.
- 598.** To the Matane and Gaspé Railway Company, for a line of railway from a point at or near St. Octave on the Intercolonial Railway to Matane, not exceeding 30 miles.
- 599.** To the Chateauguay and Northern Railway Company, for a line of railway from a point on its main line at or near L'Epiphanie, passing by way of the parish of St. Jacques de l'Achigan to the village of Rawdon, not exceeding 16 miles.
- 600.** For a line of railway from the line of the Montreal and Atlantic Railway Company at St. Guillaume to the River Yamaska to join with the South Shore Railway, a distance not exceeding 12 miles.
- 601.** For a line of railway from La Tuque on the St. Maurice River to a point on the Lake St. John Railway near the River Jeannotte, not exceeding 35 miles.
- 602.** To the Montreal Northern Railway Company, for a line of railway from a point at or near Ste. Agathe des Monts station towards the township of Howard, in the county of Argenteuil, passing near Lakes St. Joseph and Ste. Marie, in a southerly direction, a distance not exceeding 15 miles.
- 603.** To the International Railway Company of New Brunswick, for a line of railway, in addition to and in extension of the line of 67 miles mentioned in item 14 of this section, to a point on the St. John River between Grand Falls and Edmundston, not exceeding 33 miles.
- 604.** To the Beersville Coal and Railway Company, for a line of railway from Adamsville on the Intercolonial Railway to a point at or near Brown's Landing or Beersville, not exceeding 7 miles.

- 605.** To the York and Carleton Railway Company, for a line of railway from its present terminus westerly, not exceeding 5 miles.
- 606.** To the Mabou and Gulf Railway Company, Limited, for a line of railway from a point on the Intercolonial Railway at or near Mine's Road Station to the wharf at Caribou Cove, not exceeding 4 miles, being in addition to subsidy mentioned in item 18 (562) of this section.
- 607.** To the Nova Scotia Eastern Railway Company, Limited, for a line of railway from Dartmouth through the Musquodoboit Valley to a point at or near Melrose to connect there with the railway mentioned in item 19 (563) of this section, not exceeding 120 miles.
- 608.** To the Midland Railway Company, Limited, for a line of railway from Truro northerly towards Brule, not exceeding 34 miles.
- 609.** For a line of railway from St. Peters to Louisburg, not exceeding 50 miles.
- 610.** To the Koetenay Central Railway Company, for a line of railway from Golden to the International Boundary Line, via Windermere and Fort Steele, and crossing the Crow's Nest Railway at or near Elko, not exceeding 186 miles.
- 611.** To the Kettle River Valley Railway Company, for a line of railway from Grand Forks to a point 50 miles up the North Fork and West Fork of the North Fork of Kettle River, not exceeding 50 miles.
- 612.** For a line of railway from Wellington to Union Bay, not exceeding 55 miles.
- 613.** For a line of railway from Midway to Vernon, not exceeding 150 miles.
- 614.** To the St. Mary's River Railway Company, for a line of railway from Spring Coulee, crossing St. Mary's River to Cardston, 16 miles, and from a point on this line to or near the intake of the irrigation canal, about 16 miles, in all not exceeding 32 miles.
- 615.** For a line of railway from Dawson to Stewart River, passing at or near Grand Forks, not exceeding 84 miles.
- 616.** To the Canadian Pacific Railway Company, for a branch line from a point on the main line between Moosomin and Elkhorn, north-westerly to a point in the neighbourhood of the Pheasant Hills, not exceeding 136 miles.
- 617.** For a line of railway from a point at or near Medicine Hat on the Canadian Pacific Railway to the coal fields in or near townships 12 and 13, range 6, west of the fourth principal meridian, not exceeding 8 miles.
- 618.** To the Great Northern Railway of Canada, for a line of railway from Garneau Junction to the Quebec bridge, not exceeding 70 miles.
- 619.** To the Halifax and South-western Railway Company, for a line of railway to Barrington Passage, in addition to and in continuation of the 77 miles mentioned in paragraph (b) of item 23 (567) of this section, not exceeding 35 miles.
- 620.** To the Lake Superior, Long Lake and Albany Railway Company, for a line of railway from Peninsula Harbour in a northerly direction, not exceeding 10 miles.
- 621.** To the Cumberland Railway and Coal Company, for a line of railway from Parrsboro' Station to Riverside Wharf, not exceeding 1 mile.
- 622.** To the Indian River Railway Company, for a line of railway from a point at or near the north end of Lake Megantic, thence southerly along the said lake to a point on the International Boundary, not exceeding 19 miles.

3. The Governor in Council may grant the subsidies hereinafter mentioned towards the construction of the bridges also hereinafter mentioned, that is to say:—

623. Towards the construction and completion of a railway bridge and approaches over the Nicolet River at Nicolet, in lieu of the grant under item 39 of section 2 of chapter 8 of 1900, \$15,000.

624. Towards the construction of the steel superstructure of a railway bridge on the St. Francis River, in the county of Yamaska, in lieu of the grant under item 38 of section 2 of chapter 8 of 1900, but subject to the same conditions as expressed therein, payable to the Canadian Bridge Company of Walkerville, as their claim may appear for work already done on the said bridge, \$50,000.

SESSIONAL PAPER No. 20

3. To the Canadian Bridge Company of Walkerville, to strengthen and complete the foundation and approaches to the bridge over the St. Francis River subsidized in favour of the South Shore Railway Company by section 3 of chapter 7 of 1899, \$35,000, which amount shall remain the first charge on the road, and shall be recouped to the Treasury out of subsidies earned or to be earned, \$35,000.

4. To the Chateauguay and Northern Railway Company, in addition to the subsidy for the Bout de l'Île bridge granted by item 33 of section 2 of chapter 8 of 1900, \$50,000.

4. The subsidies hereby authorized towards the construction of any railway or bridge shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided in this Act, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows:—

(a.) upon the completion of the work subsidized; or

(b.) by instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work undertaken; or

(c.) upon the progress estimates on the certificate of the Chief Engineer of the Department of Railways and Canals, that, in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than thirty thousand dollars; or

(d.) with respect to (b) and (c), part one way, part the other.

5. The subsidies hereinbefore authorized to be granted to companies named shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as establish to the satisfaction of the Governor in Council their ability to construct and complete the said railways and bridges respectively; all the lines and bridges for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1903, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed according to descriptions, conditions and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the Company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make. The location also of such subsidized lines and bridges shall be subject to the approval of the Governor in Council.

6. The granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Governor in Council may at all times provide and secure to other companies such running powers, traffic arrangements and other rights, as will afford to all railways connecting with the railways and bridges so subsidized, reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the Governor in Council shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways and bridges hereby subsidized.

7. Every company receiving a subsidy under this Act, its successors and assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transportation for men, supplies, materials and mails over the portion of the line in respect of which it has received such subsidy, and whenever required, shall furnish mail cars properly equipped for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the department of the Government for which such service is being performed and the company performing it, and, in case of disagreement, then at such rates as are approved by the Governor in

9-10 EDWARD VII., A. 1910

Council; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of the subsidy received by the company under this Act.

8. As respects all railways and bridges for which subsidies are granted by this Act, the company at any time owning or operating any of the railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers, showing the cost of constructing the railway or bridge, the cost of operating it, and the earnings thereof.

9. The Governor in Council may make it a condition of the grant of the subsidies herein provided, or any heretofore authorized by any Act of Parliament as to which a contract has not yet been entered into with the company for the construction of the railway, that the company shall lay its road with new steel rails, made in Canada, if they are procurable in Canada of suitable quality, upon terms as favourable as other rails can be obtained, of which the Minister of Railways and Canals shall be judge.

By Special Act 4 Edward VII., Chap. 34, 1904.

1. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, add careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of 50 per cent on so much of the average cost of the mileage subsidized as in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

627. To the Bracebridge and Trading Lake Railway Company, for a railway from Bracebridge in Muskoka, to a point at or near Baysville, Ontario, in lieu of the subsidy granted by item 7 of section 2 of chapter 8 of 1900, not exceeding 14 miles.

628. To the Bruce Mines and Algoma Railway Company, for the following lines of railway:—

- (a.) For that portion of its line of railway from Bruce Mines Junction southerly to the town of Bruce Mines, on Lake Huron, a distance not exceeding 3 miles;
- (b.) For the 6 miles of railway constructed from Gordon Lake Station, being the end of its line as subsidized by chapter 7 of 1901, northward to Rock Lake, a distance of 6 miles;
- (c.) For 12 miles from Rock Lake northward, a distance not exceeding 12 miles;

The subsidies to the said lines being granted in lieu of the subsidy granted by item 38 of section 2 of chapter 67 of 1903, not exceeding 21 miles.

SESSIONAL PAPER No. 20

629. To the Nepigon Railway Company, for the following lines of railway :—

- (a.) From a point at or near Nepigon Station on the line of the Canadian Pacific Railway to Nepigon Lake, not exceeding 30 miles ;
- (b.) From a point on Nepigon Bay of Lake Superior to a point on the west of Lake Helen on the line of the Nepigon Railway, not exceeding $3\frac{1}{2}$ miles ;
- (c.) From a point on the line of the Nepigon Railway at or near the crossing of the Fraser River, to a point on Lake Jesse, by way of Cameron's Falls, not exceeding $1\frac{1}{2}$ mile :
- (d.) From a point on the north shore of Lake Nepigon northerly, not exceeding 45 miles ;

The subsidies to the said lines being granted in lieu of the subsidy granted by item 33 of section 2 of chapter 57 of 1903, not exceeding 80 miles.

630. For the construction of a branch line of railway beginning at the Canadian Pacific Railway Company's main line at St. Philippe d'Argenteuil Station, or at a point between there and Grenville, thence in a northerly direction, in lieu of the subsidy granted by item 49 section 2 of chapter 57 of 1903, not exceeding 3 miles.

631. To the Chateauguay and Northern Railway, for a railway from a point in Hochelaga ward, Montreal, to a point on the Great Northern Railway in or near the Town of Joliette, passing at or near the Town of L'Assomption, Quebec, together with a spur line into the said town, in lieu of the subsidy granted by item 32 of section 2 of chapter 8 of 1900, not exceeding 42 miles.

632. To the Great Northern Railway Company of Canada, to enable it to extend its railway from Arundel to a point in the municipality of the united Townships of Preston and Hartwell, Province of Quebec, in lieu of the subsidy granted to the Montford and Gatineau Colonization Railway by item 6 of section 2 of chapter 57 of 1903, not exceeding 30 miles.

633. To the Chateauguay and Northern Railway Company, for a branch line from a point on its main line at or near Charlemagne, thence northerly and westerly to a point on the Montford and Gatineau Railway at or near Morin Flats, in lieu of the subsidy granted to the Montford and Gatineau Colonization Railway by item 41 of section 2 of chapter 57 of 1903, not exceeding 22 miles.

634. To the Ottawa River Railway Company, for a line of Railway from a point at or near St. Agathe des Monts Station towards the township of Howard in the County of Argenteuil, passing near Lakes St. Joseph and St. Marie, in a southerly direction, in lieu of the subsidy granted to the Montreal Northern Railway Company by item 58 of section 2 of chapter 57 of 1903, not exceeding 15 miles.

635. To the Ottawa River Railway Company, for a line of railway between a point in the Parish of St. Andrews, in the County of Argenteuil, and a point in the Parish of St. Lawrence, in the County of Jacques Cartier, passing through the Parishes of St. Placide, St. Eustache and St. Martin, in lieu of the subsidy granted by item 10 of section 2 of chapter 57 of 1903, not exceeding 38 miles.

636. For a line of railway from Lardo towards Upper Arrow Lake, British Columbia, in lieu of the subsidy granted by item 29 of section 2 of chapter 7 of 1903, not exceeding 30 miles.

637. To the Western Alberta Railway Company, from a point on the United States boundary, west of range 27, northwesterly towards Anthracite, in the district of Alberta, in lieu of the subsidy granted by item 40 of section 2 of chapter 7 of 1899, not exceeding 50 miles.

9-10 EDWARD VII., A. 1910

3. The Governor in Council may grant the subsidy hereinafter mentionned towards the construction of the bridge also hereinafter mentioned, that is to say :—

638. To the Chateaugay and Northern Railway Company, the balance remaining unpaid of the subsidy granted by item 33 of section 2 of chapter 8 of 1900, for a single-track standard railway bridge, with two roadways 10 feet wide for free vehicular traffic, the same as upon a public highway, from Bout de L'Ile to Charlemagne at the Junction of the Ottawa and St. Lawrence Rivers, a sum not exceeding \$51,000.

4. The subsidies hereby authorized towards the construction of any railway or bridge shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided in this Act, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows :—

(a.) Upon the completion of the work subsidized ; or

(b.) By instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work undertaken ; or

(c.) Upon the progress estimates on the certificate of the Chief Engineer of the Department of Railways and Canals, that, in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than thirty thousand dollars ; or

(d.) With respect to (b) and (c), part one way, part the other.

5. The subsidies hereinbefore authorized to be granted to companies named shall, if granted by the Governor in Council, be granted to such companies respectively ; the other subsidies may be granted to such companies as establish to the satisfaction of the Governor in Council their ability to construct and complete the said railways and bridges for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1904, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed according to descriptions, conditions and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the Company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make. The location also of such subsidized lines and bridges shall be subject to the approval of the Governor in Council.

6. The granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Board of Railway Commissioners for Canada may at all times provide and secure to other companies such running powers, traffic arrangements and other rights, as will afford to all railways connecting with the railways and bridge so subsidized, reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways ; and the said Board shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways and the bridge hereby subsidized. Provided always that any decision of the said Board made under this section may be at any time varied, changed, or rescinded by the Governor in Council as he deems just and proper.

7. Every company receiving a subsidy under this Act, its successors and assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transpor-

SESSIONAL PAPER No. 20

tation for men, supplies, materials and mails over the portion of the lines in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars properly equipped for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the Department of the Government for which such service is being performed, and the company performing it, and, in case of disagreement, then at such rates as are approved by the Board of Railway Commissioners for Canada; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of subsidy received by the company under the Act.

8. As respects all railways and the bridge for which subsidies are granted by this Act, the company at any time owning or operating any of the railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers, showing the cost of constructing the railway or bridge, the cost of operating it, and the earnings thereof.

9. The Governor in Council may make it a condition of the grant of the subsidies herein provided, or any heretofore authorized by any Act of Parliament as to which a contract has not yet been entered into with the company for the construction of the railway, that the company shall lay its road with new steel rails, made in Canada, if they are procurable in Canada of suitable quality, upon terms as favourable as other rails can be obtained, of which the Minister of Railways and Canals shall be the judge.

10. Whenever a contract has been duly entered into with a company for the construction of any line of railway hereby subsidized, the Minister of Railways and Canals, at the request of the company, and upon the report of the Chief Engineer of Government Railways, and his certificate that he has made careful examination of the surveys, plans and profile of the whole line so contracted for, and has duly considered the physical characteristics of the country to be traversed and the means of transport available for construction, naming the reasonable and probable cost of such construction, may, with the authorization of the Governor in Council, enter into a supplementary agreement, fixing definitely the maximum amount of the subsidy to be paid, based upon the said certificate of the Chief Engineer, and providing that the company shall be entitled to be paid, as the minimum, the ordinary subsidy of \$3,200 per mile, together with sixty per cent of the difference between the amount so fixed and the said \$3,200 per mile, if any; and the balance, forty per cent, shall be paid only on completion of the whole work subsidized, and in so far as the actual cost, as finally determined by the Chief Engineer, entitles the company thereto: Provided always—

(a.) that the estimated cost, so certified, is not less on the average than \$18,000 per mile for the whole mileage subsidized;

(b.) that no payment shall be made except upon a certificate of the Chief Engineer that the work done is up to the standard specified in the company's contract;

(c.) that in no case shall the subsidy exceed the sum of \$6,400 per mile.

11. Whenever a contract has been duly entered into with a company for the construction of any line of railway subsidized by either of the Acts mentioned in the preamble, the Minister of Railways and Canals, at the request of the Company and upon the report of the chief engineer of government railways, and his certificate that he has made careful examination of the surveys, plans and profiles of the whole line so contracted for and has duly considered the physical characteristics of the country to be traversed and the means of transport available for construction, naming the probable and reasonable cost of such construction, may, with the authorization of the Governor in Council, enter into a supplementary agreement, fixing definitely the maximum amount of the subsidy to be paid, based upon the said certificate of the chief engineer,

9-10 EDWARD VII., A. 1910

and providing that the company shall be entitled to be paid, as the minimum, the ordinary subsidy of \$3,200 per mile, together with sixty per cent of the difference between the amount so fixed and the said \$3,200 per mile, if any; and the balance, forty per cent, shall be paid only on completion of the whole work subsidized, and in so far as the actual cost, as finally determined by the chief engineer, entitles the company thereto: Provided always—

(a.) that the estimated cost, so certified, is not less on the average than eighteen thousand dollars per mile for the whole mileage subsidized;

(b.) that no payment shall be made except upon a certificate of the chief engineer that the work done is up to the standard specified in the Company's contract;

(c.) that in no case shall the subsidy exceed the sum of six thousand four hundred dollars per mile.

2. In construing this Act the word "cost" shall have the meaning assigned to it by the Act authorizing the granting of the subsidy.

By Act, 6 Edward VII, Cap 43, 1906, (assented to 13th July, 1906).

1. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any one case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

639. To the Manitoulin and North Shore Railway Company (or to the Canada Central Railway Company, with the consent of the Manitoulin and North Shore Railway Company, and subject to the approval of the Governor in Council), for the following lines of Railway:—

(a) From Little Current thence crossing the Canadian Pacific Railway, at or near Stanley, and thence to Sudbury, not exceeding 64 miles.

(b) From a point on the said line of railway, between Little Current and Sudbury, westerly towards the Algoma Central and Hudson Bay Railway, not exceeding 100 miles; and

(c) From a point at or near Sudbury northerly, not exceeding 30 miles; the said subsidies being granted in lieu of the subsidies of 64 and 130 miles, granted by chapter 8 of 1900, section 2, item 6, as amended by section 5 of chapter 7 of 1901, and chapter 7 of 1901, section 2, item 14, respectively.

640. To the Algoma Central and Hudson Bay Railway Company for a line of railway from Sault St. Marie to a point on the Canadian Pacific Railway between White River and Dalton stations in the District of Algoma, not exceeding 200 miles, and, for a line of Railway from Michipicoten Harbour, Lake Superior, towards the main line of the Canadian Pacific Railway not exceeding 25 miles; in lieu of the subsidies of 40, 50 and 135 miles granted by chapter 7 of 1899, section 2, item 23, chapter 8 of 1900, section 2, item 4 and chapter 7 of 1901, section 2, item 20, respectively.

641. To the Lotbinière and Megantic Railway Company to extend its railway southerly from a point at or near Lyster in Megantic County to or towards a point at or near Lime Ridge in the Township of Dudswell; in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 8, not exceeding 50 miles.

SESSIONAL PAPER No. 20

- 642.** For a line of railway from Lake Nominique to La Lièvre, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 44, not exceeding 35 miles.
- 643.** For a line of railway from a point on the Intercolonial Railway at or near Dartmouth, in the County of Halifax, to Guysborough, in the County of Guysborough, with branch lines to a point on the Intercolonial Railway at or near New Glasgow, in the County of Pictou, and also to Country Harbour, in the County of Guysborough, not exceeding in the whole 236 miles in lieu of subsidies of 116 and 120 miles granted by chapter 57 of 1903, section 2, items 19 and 63 respectively.
- 644.** For a line of railway from Wellington to Union Bay, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 68, not exceeding 55 miles.
- 645.** For a line of railway from a point at or near Sharbot Lake or Bathurst Station, in the Province of Ontario, or between those points via Lanark Village to Carleton Place, in lieu of the subsidy granted by chapter 7 of 1901, section 2, item 17, not exceeding 41 miles.
- 646.** For a line of railway from Cape Tourmente towards Murray Bay, in lieu of the subsidy granted by chapter 5 of 1892, not exceeding 20 miles.
- 647.** To the Atlantic, Quebec and Western Railway Company, for a line of railway from Gaspé to a point at or near Causapsal on the Intercolonial Railway and from that point to Edmundston, not exceeding 260 miles; and for a line of railway from Paspebiac to Gaspé as near the shore as practicable, not exceeding 102 miles; in lieu of the subsidies granted by chapter 57 of 1903, section 2, item 51.
- 648.** To the Nipigon Railway Company, for the following lines of railway:—
- (a) From a point at or near Nipigon Station on the line of the Canadian Pacific Railway to Nipigon Lake, not exceeding 30 miles.
 - (b) From a point on Nipigon Bay of Lake Superior to a point on the west of Lake Helen on the line of the Nipigon Railway, not exceeding $3\frac{1}{2}$ miles.
 - (c) From a point on the line of the Nipigon Railway at or near the crossing of the Fraser River, to a point on Lake Jesse, by way of Cameron's Falls, not exceeding $1\frac{1}{2}$ miles.
 - (d) From a point on the North shore of Lake Nipigon northerly, not exceeding 45 miles;
- The said subsidies to the said lines being granted in lieu of the subsidies granted by chapter 34 of 1904, section 2, item 3, not exceeding in the whole 80 miles.
- 649.** For a line of railway from Quebec towards Seven Islands, including branches to Murray Bay and Baie St. Paul, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 48, not exceeding 200 miles.
- 650.** For a line of railway from Roberval westward towards James Bay, in lieu of the subsidies granted by chapter 57, of 1903, section 2, items 11 and 52, not exceeding 100 miles.
- 651.** To the Quebec Central Railway Company for an extension of its line of railway from St. Francis to St. George not exceeding 9 miles; and for a line of railway from Scott Junction to the Quebec Bridge, not exceeding 23 miles; in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 46.

9-10 EDWARD VII., A. 1910

- 652.** To the Western Alberta Railway Company for a line of railway from a point on the United States Boundary, west of range 21, northwesterly towards Anthracite, in the Province of Alberta, in lieu of the subsidy granted by chapter 34 of 1904, section 2, item 11, not exceeding 50 miles.
- 653.** To the Shediac and Coast Railway Company for a line of railway from Shediac to Shemogue and towards Cape Tormentine in Westmoreland County, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 17, not exceeding 38 miles.
- 654.** For a line of railway from St. Constant in the County of Laprairie and Napierville, through St. Edouard, St. Cyprien and Lacolle to a point at or near the International boundary line on the Delaware and Hudson Railway (Grand Trunk) lieu of the 19 and 12 mile subsidies granted by chapter 7 of 1899, section 2, item 10 and chapter 4 of 1894 respectively, not exceeding 28 miles.
- 655.** To the Lake Superior, Long Lake and Albany Railway Company for a line of railway from Peninsula Harbour in a northerly direction, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 76, not exceeding 10 miles.
- 656.** For a line of railway from Owen Sound in the Province of Ontario to Meaford, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 34, not exceeding 30 miles.
- 657.** To the Kingston, Smith's Falls and Ottawa Railway Company for a line of railway from Kingston to Ottawa, being a revote of the subsidy granted by chapter 4 of 1897, not exceeding 101 miles.
- 658.** To the Lotbinière and Megantic Railway Company, for a line of railway from a point on its line between Lyster and Lime Ridge, to a point at or near the Bridge over the St. Lawrence at or near Quebec, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 45, not exceeding 30 miles.
- 659.** For a line of railway from a point on the Quebec and Lake St. John Railway, near the River Jeannotte to La Tuque, on the St. Maurice River, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 57, not exceeding 35 miles.
- 660.** To the Halifax and South Western Railway Company, for a line of railway from a point at or near Halifax, to a point at or near Barrington Passage, (except that part east of Bridgewater which formerly formed part of the line of the Central Railway), in lieu of the 68, 77 and 35 miles of subsidies granted by chapter 57 of 1903, section 2, item 23 (a) and (b), and item 75, respectively, not exceeding 185 miles.
- 661.** To the Bay of Quinté Railway Company, for a line of railway from a point at or near the Village of Tweed, thence northwesterly to a point at or near the Village of Bannockburn, in the County of Hastings, being a revote in part of the subsidy granted by chapter 7 of 1899, section 2, item 45, and in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 37, not exceeding in all 20 miles.
- 662.** For a line of railway from a point at or near Baptiste, easterly to a point at or near Renfrew, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 32, not exceeding 75 miles.

SESSIONAL PAPER No. 20

- 663.** For a line of railway from the Station of Lac Bouchette, or from a point one mile east of the said station, on the Quebec and Lake St. John Railway, to St. André, in lieu of subsidy granted by chapter 57 of 1903, section 2, item 47, not exceeding 13 miles.
- 664.** For a line of railway from Debert Station, on the Interecolonial Railway, to Debert Coal Mine, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 20, not exceeding $4\frac{1}{2}$ miles.
- 665.** For a line of railway from a point at or near Toulon, to a point on the Icelandic River, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 27, not exceeding 35 miles.
- 666.** To the Ontario, Northern and Temagami Railway Company (formerly the Temagami Railway Company), for a line of railway from a point at or near Sturgeon Falls, in a northwesterly direction, to a point on the westerly shore of Lake Temagami, in the District of Nipissing, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 36, not exceeding 50 miles.
- 667.** To the Quebec and Lake St. John Railway Company, for a line of railway from Roberval to the Government wharf at Lake St. John, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 40, not exceeding one mile.
- 668.** For a line of railway from Truro northerly towards Brule, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 64, not exceeding 34 miles.
- 669.** To the Kootenay Central Railway Company, for a line of railway from Golden towards the International Boundary line, via Windermere and Fort Steele, and crossing the Crow's Nest Railway at or near Elko, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 66, not exceeding 186 miles.
- 670.** To the Brockville, Westport and Sault Ste. Marie Railway Company, the balance remaining unpaid of the subsidy granted by chapter 3 of 1889, not exceeding \$3,200 per mile, and also the balance remaining unpaid of the subsidy granted by chapter 2 of 1890, which was regranting by chapter 5 of 1892; the whole not exceeding \$86,800, being a revote of the subsidy granted by chapter 4 of 1894, and that the said subsidy or so much thereof as has heretofore been agreed upon by the terms of an agreement filed in the Department of Railways and Canals between said Brockville, Westport and Sault Ste. Marie Railway Company and the creditors of said Railway Company, to be paid over to the said creditors or the legal representatives of said creditors as mentioned in said agreement.
- 671.** For a line of railway from Jonquieres to La Baie des Ha Ha, in lieu of subsidy granted by chapter 57 of 1903, section 2, item 7, not exceeding 20 miles.
- 672.** For a line of railway from St. Rose via the east side of Lake Ainslie to or towards Orangedale on the Interecolonial Railway, not exceeding 34 miles; and for a line of railway from a point on the Interecolonial Railway at or near Mines Road Station to the wharf at Caribou Cove not exceeding four miles; in lieu of the subsidy granted by chapter 57 of 1903, section 2, items 18 and 62.
- 673.** For a line of railway from a point at or near Wolfville on the Dominion Atlantic Railway to the Government Pier at the Basin of Minas, not exceeding one mile, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 25.

9-10 EDWARD VII., A. 1910

- 674.** To the Great Northern Railway of Canada for a line of railway in extension of its railway from a point at or near Arundel to a point in the municipality of the United Townships of Preston and Hartwell, not exceeding 30 miles ; and for a line of railway connecting its Montford and Gatineau line with the main line at St. Jerome, not exceeding 22 miles ; in lieu of the subsidies granted to the Montford and Gatineau Colonization Railway Company by items 6 and 41 of section 2 of chapter 57 of 1903.
- 675.** To the Great Northern Railway of Canada, for a line of railway from, at or near Garneau Junction to or towards the Quebec Bridge, not exceeding 70 miles, in lieu of the subsidy granted by item 74 of section 2, of chapter 57 of 1903.
- 676.** For a line of railway from a point at or near Ste. Agathe des Monts Station towards the Township of Howard, in the County of Argenteuil, passing near Lakes St. Joseph and Ste. Marie, in a southerly direction, not exceeding 15 miles ; and for a line of railway between a point in the parish of St. Andrews, in the County of Argenteuil, and a point in the parish of St. Laurent, in the County of Jacques Cartier, passing through the parishes of St. Placide, St. Eustache and St. Martin, not exceeding 38 miles ; in lieu of the subsidies granted by chapter 34 of 1904, items 8 and 9 of section 2, not exceeding in the whole 53 miles.
- 677.** To the Kettle River Valley Railway Company for a line of railway from Grand Forks to a point 50 miles up the North Fork of Kettle River, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 67, not exceeding 50 miles.
- 678.** To the Ottawa Northern and Western Railway for a line of railway from Aylmer to a point of junction with the Interprovincial Bridge approach in the City of Hull (except that portion thereof beginning at a point of junction with the line of the Hull Electric Railway in the City of Hull and terminating at a point on the main line of the Canadian Pacific Railway at the east end of its Hull Station yard) not exceeding nine miles, in lieu of the subsidy granted by item 12 of section 2 of chapter 7, of 1899, and by the first portion of item 13 of section 2 of chapter 57 of 1903.
- 679.** To the Toronto, Lindsay and Pembroke Railway Company, for a line of railway from Golden Lake to Bancroft, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 3, not exceeding 51 miles.
- 680.** To the Interprovincial and James Bay Railway Company, for a line of railway from the Lake Temiskaming at the present terminus of the Canadian Pacific Railway in a northerly direction, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 42, not exceeding 50 miles.
- 681.** For a line of railway from Waltham Station to Ferguson Point, in the County of Pontiac, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 43, not exceeding 20 miles.
- 682.** To the Matane and Gaspé Railway Company, for a line of railway from a point at or near St. Octave, on the Intercolonial Railway, to Matane, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 54, not exceeding 30 miles.
- 683.** For a line of railway from the Village of Haliburton, via the Village of Whitney, towards the Town of Mattawa, Ontario, in lieu of the subsidies granted by chapter 7 of 1899, section 2, item 25, and chapter 8 of 1900, section 2, item 9, not exceeding 60 miles.

SESSIONAL PAPER No. 20

684. For a line of railway from Dawson to Stewart River, passing at or near Grand Forks, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 71, not exceeding 84 miles.

2. That unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and shall include the amount expended upon any bridge up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway, nor the cost of terminals, nor the cost of right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of the Department of Railways and Canals, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

3. That the subsidies to be authorized towards the construction of any railway shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided herein, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows:—

(a) upon the completion of the work subsidized: or

(b) by instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work undertaken; or

(c) upon the progress estimates on the certificate of the Chief Engineer of the Department of Railways and Canals, that, in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than thirty thousand dollars: or

(d) with respect to (b) and (c), part one way, part the other.

4. That the subsidies to be authorized to be granted to companies named shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as established to the satisfaction of the Governor in Council their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1906, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed according to descriptions, conditions and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make. The location also of such subsidized lines shall be subject to the approval of the Governor in Council.

5. That the granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Board of Railway Commissioners for Canada may at all times provide and secure to other companies such running powers, traffic arrangements and other rights, as will afford to all railways connecting with the railways so subsidized, reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the said Board shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways so subsidized: Provided always that any

9-10 EDWARD VII., A. 1910

decision of the said Board made under this section may be at any time varied, changed, or rescinded by the Governor in Council as he deems just and proper.

6. That every company so receiving a subsidy, its successors and assigns, and any person or company controlling or operating the railway or portion of railway so subsidized, shall each year furnish to the Government of Canada, transportation for men, supplies materials and mails, over the portion of the lines in respect of which it has received such subsidy, and whenever required, shall furnish mail cars properly equipped for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the Department of the Government for which such service is being performed, and the company performing it, and, in case of disagreement, then at such rates as are approved by the Board of Railway Commissioners for Canada; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of the subsidy so received by the company.

7. That as respects all railways for which subsidies are granted, the company at any time owning or operating any of the railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers, showing the cost of constructing the railway or bridge, the cost of operating it, and the earnings thereof.

8. That the Governor in Council may make it a condition of the grant of the subsidies herein provided, that the company shall lay its road with new steel rails, made in Canada, if they are procurable in Canada of suitable quality, upon terms as favourable as other rails can be obtained, of which the Minister of Railways and Canals shall be the judge.

9. That whenever a contract has been duly entered into with a company for the construction of any line of railway so subsidized, the Minister of Railways and Canals, at the request of the company, and upon the report of the Chief Engineer of the Department of Railways and Canals, and his certificate that he has made careful examination of the surveys, plans and profile of the whole line so contracted for, and has duly considered the physical characteristics of the country to be traversed and the means of transport available for construction, naming the reasonable and probable cost of construction, may, with the authorization of the Governor in Council, enter into a supplementary agreement, fixing definitely the maximum amount of the subsidy to be paid, based upon the said certificate of the Chief Engineer, and providing that the company shall be entitled to be paid, as the minimum, the ordinary subsidy of \$3,200 per mile, together with sixty per cent of the difference between the amount so fixed and the said \$3,200 per mile, if any; and the balance, forty per cent, shall be paid only on completion of the whole work subsidized, and in so far as the actual cost, as finally determined by the Governor in Council upon the recommendation of the Minister of Railways and Canals and upon the report and certificate of the said Chief Engineer, entitles the company thereto; Provided always:—

(a) that the estimated cost, as certified, is not less on the average than \$18,000 per mile for the whole mileage subsidized;

(b) that no payment shall be made except upon a certificate of the Chief Engineer that the work done is up to the standard specified in the company's contract;

(c) that in no case shall the subsidy exceed the sum of \$6,400 per mile.

SESSIONAL PAPER No. 20

By Act, 6-7 Edward, Cap 40, 1907, assented to 27 April, 1907.

1. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway, not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile :—

- 685. To the Central Ontario Railway for an extension of its railway from a point at or near Bancroft to a point on the Canada Atlantic Railway at or near Whitney, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 4, not exceeding 40 miles.
- 686. For a line of railway from Woodstock to the International Boundary in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 15, not exceeding 26 miles.
- 687. For a line of railway from a point on the Canadian Pacific Railway at or near Welsford or Westfield, or between the said two points, to Gagetown, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 16, not exceeding 30 miles.
- 688. For a line of railway from Liverpool to Milton, Nova Scotia, in lieu of part of the subsidy granted by Chapter 57 of 1903, Section 2, Item 23(d), not exceeding 7 miles.
- 689. For a line of railway from Milton to Caledonia, Nova Scotia, in lieu of part of the subsidy granted by Chapter 57 of 1903, Section 2, Item 23(d), not exceeding 22 miles.
- 690. For a line of railway from Cheticamp to a point on the line already built between Broad Cove and Point Tupper, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 24, not exceeding 37 miles.
- 691. For a line of railway from a point on the Dominion Atlantic Railway to the Government pier or wharf at Canning, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 25, not exceeding 1 mile.
- 692. To the Nicola, Kamloops and Similkameen Coal and Railway Company for a line of railway from a point at or near Spence's Bridge, on the Canadian Pacific Railway, to Nicola Lake, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 26, not exceeding 47 miles.
- 693. To the Edmonton, Yukon and Pacific Railway Company, for a line of railway from the Town of Strathcona to Edmonton and thence westerly towards the Yellowhead Pass, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 28, not exceeding 50 miles.
- 694. For a line of railway from Fredericton to Woodstock, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 29, not exceeding 59 miles.
- 695. For a line of railway from Hawkesbury, Ontario, to South Indian, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 30, not exceeding 35 miles.

9-10 EDWARD VII., A. 1910

- 696.** To the Tilsonburg, Lake Erie and Pacific Railway Company, for a line of railway from Woodstock northerly to a point on the Grand Trunk Railway at Berlin, or from Ingersoll to Stratford, or to any point on the Grand Trunk Railway between these places, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 31, not exceeding 35 miles.
- 697.** To the Canadian Northern Ontario Railway Company for a line of railway from Toronto, via the east side of Lake Simcoe, to a point at, near or beyond Sudbury through Parry Sound, in lieu of the subsidy granted to the James Bay Railway Company by Chapter 57 of 1903, Section 2, Item 39, not exceeding 265 miles.
- 698.** For a branch line from a point at or near the intersection of the Canadian Pacific Railway and the Canadian Northern Quebec Railway (formerly the Great Northern Railway) between St. Philippe d'Argenteuil and Lachute, thence in a northerly direction passing through the Village of Brownsburg, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 49, not exceeding 4.2 miles.
- 699.** To the Orford Mountain Railway Company for the following lines of railway, namely:—from Bolton Line to Mansonville 7.54 miles; from Mansonville to the International Boundary 3.12 miles; from Windsor Mills to Brompton Falls 8 miles; from Melbourne Road Crossing to Melbourne Village 3.50 miles; and from a point on its main line of railway to the south of end of Bonella Lake 5 miles; in lieu of the subsidies granted by Chapter 57 of 1903, Section 2, Item 50, but not exceeding in the whole 27 miles.
- 700.** To the Canadian Northern Quebec Railway Company, for a line of railway from a point on its main line at or near L'Epiphanie, passing by way of the Parish of St. Jacques de l'Achigan, to the Village of Rawdon, in lieu of the subsidy granted to the Chateauguay and Northern Railway Company by Chapter 57 of 1903, Section 2, Item 55, not exceeding 16 miles.
- 701.** To the York and Carleton Railway Company, for a line of railway from its present terminus westerly, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 61, not exceeding 5 miles.
- 702.** To the Midway and Vernon Railway Company, for a line of railway from Midway to Vernon, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 69, not exceeding 150 miles.
- 703.** For a line of railway from a point at or near the north end of Lake Megantic, thence along the said lake to a point on the International Boundary at or near Rivière Morte, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 78, not exceeding 19 miles.
- 704.** For a line of railway from Wellington to or towards Union Bay by way of Alberni in lieu of the subsidy granted by Chapter 43 of 1906, Section 1, Item 6, not exceeding 55 miles.
- 705.** For a line of railway from Ste. Rose (or from Chimney Corner Coal Mines to a point at or near Chimney Corner Cove) thence via the east side of Lake Ainslie to or towards a point on the Intercolonial Railway at or near Orangedale, not exceeding 34 miles; and for a line of railway from a point on the Intercolonial Railway between Orangedale and Point Tupper to Caribou Cove, or Inhabitants Bay or River, not exceeding 4 miles; in lieu of the subsidies granted by Chapter 43 of 1906, Section 1, Item 34.

SESSIONAL PAPER No. 20

706. To the Klondike Mines Railway Company for the following lines of railway, namely :—

(a) for a line of railway from Dawson to a point at or near Sulphur Spring, not exceeding 31 miles ;

(b) for a line of railway from a point at or near Sulphur Spring to a point at or near the Divide between Dominion and Flat Creeks, not exceeding 45 miles ;

(c) for a line of railway from a point at or near the said Divide to or towards the Stewart River, not exceeding 8 miles ;

The whole in lieu of the subsidy granted by Chapter 43 of 1906, Section 1, Item 46.

707. For a line of railway from St. Peter's to Louisbourg, in lieu of the subsidy granted by Chapter 57 of 1903, Section 2, Item 65, not exceeding 50 miles.

708. For a line of railway from Grandique Ferry, to Arichat, Nova Scotia, being a revote of the subsidy granted by Chapter 7 of 1901, Section 2, Item 15, not exceeding 8 miles.

709. For a line of railway from Connors, at the terminus of the Témiscouata Railway, to a point on the boundary line between New Brunswick and Quebec, at the foot of Bean Lake, being a revote of part of the subsidy granted by Chapter 7 of 1901, Section 2, Item 2, not exceeding 18 miles.

710. 2. Resolved, That the Governor in Council may grant, towards the construction and completion of a railway bridge and approaches over the Nicolet River at Nicolet, in lieu of the subsidy granted by Chapter 57 of 1903, Section 3, Item 1, a subsidy of \$15,000.

3. Resolved, That in these Resolutions, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway nor the cost of terminals nor the cost of right of way of the railway in any city or incorporated town ; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of the Department of Railways and Canals, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

4. Resolved, That the subsidies hereby authorized towards the construction of any railway or bridge shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided in these Resolutions, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows :—

(a) Upon the completion of the work subsidized ; or

(b) By instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed sections bears to that of the whole work undertaken ; or

(c) Upon the progress estimates on the certificate of the Chief Engineer of the Department of Railways and Canals that, in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than thirty thousand dollars ; or

(d) With respect to (b) and (c), part one way, part the other.

9-10 EDWARD VII., A. 1910

5. Resolved, That the subsidies hereinbefore authorized to be granted to companies named shall, if granted by the Governor in Council be granted to such companies respectively; the other subsidies may be granted to such companies as establish to the satisfaction of the Governor in Council their ability to construct and complete the said railways and bridge respectively; all the lines and the bridge for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1907, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed according to descriptions, conditions and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the Company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make. The location also of such subsidized lines and bridge shall be subject to the approval of the Governor in Council.

6. Resolved, That the granting of such subsidies and the receipt thereof by the respective companies, shall be subject to the condition that the Board of Railway Commissioners of Canada may at all times provide and secure to other companies such running powers, traffic arrangements and other rights as will afford to all railways connecting with the railways and bridge so subsidized reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the said Board shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways and bridge hereby subsidized: Provided always that any decision of the said Board made hereunder may be at any time varied, changed, or rescinded by the Governor in Council, as he deems just and proper.

7. Resolved, That every company receiving a subsidy hereunder, its successors and assigns, and any person or company controlling or operating the railway or portion of railway hereby subsidized, shall each year furnish to the Government of Canada transportation for men, supplies, materials and mails over the portion of the lines in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars properly equipped for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the department of the Government for which such service is being performed, and the company performing it, and, in case of disagreement, then at such rates as are approved by the Board of Railway Commissioners for Canada; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of the subsidy received by the company hereunder.

8. Resolved, That as respects all railways and the bridge for which subsidies are granted hereby, the company at any time owning or operating any of the railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers showing the cost of constructing the railway or bridge, the cost of operating it, and the earnings thereof.

9. Resolved, That the Governor in Council may make it a condition of the grant of the subsidy herein provided that the company shall lay the railway with new steel rails and fastenings made in Canada and shall purchase all materials and supplies required for the construction of the railway and bridge and the rolling stock for the first equipment of the railway from Canadian producers, if such rails, fastenings, materials, supplies and equipment are procurable in Canada of suitable quality and upon terms as favourable as elsewhere, of which the Minister of Railways and Canals shall be the judge.

SESSIONAL PAPER No. 20

10. Resolved, That whenever a contract has been duly entered into with a company for the construction of any line of railway hereby subsidized, the Minister of Railways and Canals, at the request of the company, and upon the report of the Chief Engineer of the Department of Railways and Canals, and his certificate that he has made careful examination of the surveys, plans and profile of the whole line so contracted for, and has duly considered the physical characteristics of the country to be traversed and the means of transport available for construction, naming the reasonable and probable cost of such construction, may, with the authorization of the Governor in Council, enter into a supplementary agreement, fixing definitely the maximum amount of the subsidy to be paid, based upon the certificate of the Chief Engineer, and providing that the company shall be entitled to be paid, as the minimum, the ordinary subsidy of \$3,200 per mile, together with sixty per cent of the difference between the amount so fixed and the said \$3,200 per mile, if any; and the balance, forty per cent, shall be paid only on completion of the whole work subsidized, and in so far as the actual cost, as finally determined by the Governor in Council upon the recommendation of the Minister of Railways and Canals, and upon the report and certificate of the said Chief Engineer, entitles the company thereto: Provided always—

(a) that the estimated cost, as certified, is not less on the average than \$18,000 per mile for the whole mileage subsidized;

(b) that no payment shall be made except upon a certificate of the Chief Engineer that the work done is up to the standard specified in the company's contract;

(c) that in no case shall the subsidy exceed the sum of \$6,400 per mile.

By Act 7-8 Edward VII., cap. 63, 1908 (*assented to 20th July, 1908*):—

1. The Governor in Council may grant a subsidy of \$3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than \$15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway, not exceeding the mileage hereinafter stated, which shall cost more on the average than \$15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of \$3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of \$15,000 per mile, such subsidy not exceeding in the whole the sum of \$6,400 per mile:—

Revotes.

711. To the Kettle River Valley Railway Company, for a line of railway from a point at or near Grand Forks to a point fifty miles up the North Fork and East or West Fork of the North Fork, of Kettle River, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 39; not exceeding 50 miles.

712. For a line of railway from Owen Sound, in the Province of Ontario, to Meaford, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 18; not exceeding 30 miles.

713. For a line of railway from Sharbot Lake or Bathurst Station, in the Province of Ontario, or between these points, via Lanark Village, to Carleton Place, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 7; not exceeding 41 miles.

714. To the Nipigon Railway Company, for the following lines of railway:—

(a) from a point at or near Nipigon Station on the line of the Canadian Pacific Railway to Nipigon Lake; not exceeding 30 miles;

9-10 EDWARD VII., A. 1910

(b) from a point on Nipigon Bay of Lake Superior to a point on the west of Lake Helen on the line of the Nipigon Railway ; not exceeding $3\frac{1}{2}$ miles ;

(c) from a point on the line of the Nipigon Railway at or near the crossing of the Fraser River to a point on Lake Jesse, by way of Cameron's Falls ; not exceeding $1\frac{1}{2}$ miles ;

(d) from a point on the north shore of Lake Nipigon northerly ; not exceeding 45 miles ;

The said subsidies to the said lines being granted in lieu of the subsidies granted by chapter 43 of 1906, section 1, item 10, not exceeding in all 80 miles.

715. To the Manitoulin and North Shore Railway Company (or to the Canada Central Railway Company with the consent of the Manitoulin and North Shore Railway Company, and subject to the approval of the Governor in Council), for the following lines of railway :—

(a) from a point on the said line of railway, between Little Current and Sudbury, westerly towards the Algoma Central and Hudson Bay Railway ; not exceeding 100 miles ;

(b) from Little Current thence crossing the Canadian Pacific Railway, at or near Stanley, and thence to Sudbury, not exceeding 64 miles.

(c) from a point at or near Sudbury, northerly, not exceeding 30 miles ; the said subsidies being granted in lieu of the subsidies granted by chapter 43 of 1906, section 1, item 1 ; not exceeding in all 194 miles.

716. To the Ontario, Northern and Timagami Railway Company for a line of railway from a point at or near Sturgeon Falls, in a northwesterly direction, to a point on the westerly shore of Lake Timagami, in the District of Nipissing, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 28 ; not exceeding 50 miles.

717. For a line of railway from a point at or near Baptiste, easterly to a point at or near Renfrew, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 24 ; not exceeding 75 miles.

718. To the Bracebridge and Trading Lake Railway Company, for a railway in Bracebridge, in Muskoka, to a point at or near Baysville, Ontario, in lieu of the subsidy granted by chapter 34 of 1904, section 2, item 1, for 15 miles ; not exceeding 16 miles.

719. To the Quebec and Lake St. John Railway Company, for a line of railway from Roberval westward towards James Bay, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 12 ; not exceeding 100 miles.

720. To the Matane and Gaspé Railway Company, for a line of railway from a point at or near Ste. Flavie, on the Intercolonial Railway, to Matane, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 44, for 30 miles ; not exceeding 38 miles.

721. To the Canadian Northern Quebec Railway Company, for a line of railway from a point at or near Arundel to a point in the municipality of the united townships of Preston and Hartwell, not exceeding 30 miles ; and for a line of railway connecting its Montfort and Gatineau line with the main line at St. Jerome, not exceeding 15.2 miles ; in lieu of the subsidies granted to the Great Northern Railway of Canada by chapter 43 of 1906, section 1, item 36 not exceeding in all 45.2 miles.

SESSIONAL PAPER No. 20

- 722.** To the Canadian Northern Quebec Railway Company, for a line of railway from, or from near, Garneau Junction to Quebec, with a branch to or towards the Quebec Bridge, in lieu of the subsidy granted to the Great Northern Railway of Canada by chapter 43 of 1906, section 1, item 37, for 70 miles ; not exceeding 83 miles.
- 723.** To the Atlantic, Quebec and Western Railway Company, for a line of railway from a point at or near Causapsal, on the Intercolonial Railway, to Edmundston, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 9, for a line between the points above mentioned ; not exceeding 160 miles.
- 724.** For a line of railway from Yamaska to a point in the County of Lotbinière, in lieu of the subsidy granted by chapter 57 of 1903, section 2, item 12, not exceeding 70 miles ; and for a line of railway from Mount Johnson to St. Gregoire Station, in lieu of the subsidy granted to the United Counties Railway Company by chapter 7 of 1899, section 2, item 16, for one mile, not exceeding $1\frac{1}{2}$ mile : and not exceeding in all $71\frac{1}{2}$ miles.
- 725.** To the International Railway Company of New Brunswick, for a line of railway from the western end of the twenty miles of its railway, as already constructed from Campbellton, to a point on the St. John River between Grand Falls and Edmundston, in lieu of the subsidies granted by chapter 57 of 1903, section 2, items 14 and 59 respectively ; not exceeding 90 miles.
- 726.** For a line of railway from Brazil Lake, on the Dominion Atlantic Railway, to Kemptville, Nova Scotia, in lieu of the subsidy granted by chapter 8 of 1900, section 2, item 30 ; not exceeding 11 miles.
- 727.** To the Inverness Railway and Coal Company, for a line of railway from Cheticamp to a point on the line already built between Broad Cove and Point Tupper, in lieu of the subsidy granted by chapter 57, of 1903, section 2, item 24, for 37 miles ; not exceeding 37 miles.
- 728.** To the Margaree Coal and Railway Company, for a line of railway from a point at or near Orangedale, on the Intercolonial Railway, thence via the east side of Lake Ainslie and Ste. Rosa, to Chinnery Corner Cove, not exceeding 46 miles ; and from a point on the Intercolonial Railway between Orangedale and Point Tupper to Caribou Cove on Inhabitant's Bay or River, not exceeding 4 miles ; in lieu of the subsidy granted by chapter 40 of 1907, section 1, item 21, for 38 miles ; not exceeding in all 50 miles.
- 729.** To the Lotbinière and Megantic Railway Company, for a line of railway to extend its railway southerly from a point at or near Lyster, in Megantic County, to or towards a point at or near Lime Ridge, in the township of Dufréswell, not exceeding 50 miles ; and for a line of railway from a point on its line in the township of Inverness, to a point at or near the bridge over the St. Lawrence at or near Quebec, not exceeding 30 miles ; in lieu of the subsidies granted by chapter 43 of 1906, section 1, items 3 and 20, respectively ; not exceeding in all 80 miles.
- 730.** To the Cape Breton Railway Company, Limited, for a line of railway from Port Hawkesbury or Point Tupper, on the Strait of Canso, Nova Scotia, to St. Peter's, in lieu of the subsidy granted by chapter 7, of 1899, section 2, item 6, for 30 miles ; not exceeding 31 miles.

9-10 EDWARD VII., A. 1910

- 731.** For a line of railway from a point on the Intercolonial Railway at or near Dartmouth, in the County of Halifax, to a point at or near Deans Settlement, in the County of Halifax, in lieu in part of the subsidy granted by chapter 43, of 1906, section 1, item 5; not exceeding 80 miles.
- 732.** For a line of railway from a point at or near Deans Settlement, in the County of Halifax, to a point at or near Melrose, in the County of Guysborough, in lieu in part of the subsidy granted by chapter 43, of 1906, section 1, item 5; not exceeding 52 miles.
- 733.** For a line of railway from a point at or near New Glasgow, in the County of Pictou, to a point at or near Melrose, in the County of Guysborough, and from the said point at or near Melrose to Guysborough, in the County of Guysborough, with branch line to Country Harbour in the County of Guysborough, in lieu in part of the subsidy granted by chapter 43, of 1906, section 1, item 5; not exceeding in all 116 miles.
- 734.** To the Ha Ha Bay Railway Company, for a line of railway from a point at or near Jonquières Village to Baie des Ha Ha, via Laterrières Village, in lieu of the subsidy granted by chapter 43, of 1906, section 1, item 33, for 20 miles; not exceeding 24 miles.
- 735.** To the Quebec and New Brunswick Railway Company, for a line of railway from Chaudiere Junction to a point at or near the International Boundary, in lieu of the subsidy granted by chapter 7 of 1901, section 2, item 2, for 45 miles; not exceeding 62 miles.
- 736.** For a line of railway from a point at or near Ste. Agathe des Monts Station towards the township of Howard, in the County of Argenteuil, passing near Lake St. Joseph and St. Mary in a southerly direction, in lieu of the subsidy granted by chapter 43 of 1906, section 1, item 38; not exceeding 45 miles.
- 737.** For a line of railway from Tusket Wedge to a point on the Halifax South western Railway at or near Riverdale Station; not exceeding 8 miles.
- 738.** To the Halifax and Southwestern Railway Company, for a line of railway from Lunenburg to Bridgewater, via upper Lahave; not exceeding 12 miles.
- 739.** To the Erie, London and Tillsonburg Railway Company, for a line of railway from Port Burwell to London; not exceeding 35 miles.
- 740.** For a line of railway from a point at or near Centreville to Aylesford, or Kingston or Middleton, on the line of the Dominion Atlantic Railway; not exceeding 35 miles.
- 741.** For a line of railway from a point on the Canadian Pacific Railway at or near Plaster Rock to Riley Brook; not exceeding 28 miles.
- 742.** To the North Shore Railway Company, Limited (formerly the Beersville Coal and Railway Company), for a line of railway extending its present line from Beersville to Brown's Landing, not exceeding 7 miles; and for a branch line of railway from its main line to Mount Carlyle, not exceeding $2\frac{1}{2}$ miles; not exceeding in all $9\frac{1}{2}$ miles.
- 743.** To the York and Carleton Railway Company, for a line of railway from its present terminus to a point on the National Transcontinental Railway; not exceeding 9 miles.

SESSIONAL PAPER No. 20

- 744.** To the Vancouver and Lulu Island Railway Company, for a line of railway from Eburn, on its main line, to New Westminster; not exceeding 9.65 miles.
- 745.** To the Esquimalt and Nanaimo Railway Company, for a line of railway from a point near French Creek to the village of Sandwich, not exceeding 41 miles; and for a line of railway from the village of Sandwich to Campbell River, not exceeding 38 miles; not exceeding in all 79 miles.
- 746.** For a line of railway from MacLeod, via Cardston, towards a point on the International Boundary west of range 21; not exceeding 45 miles.
- 747.** To the Southern Central Pacific Railway Company for a line of railway from a point at or near Cowley, in Alberta, to a point on Highwood River; not exceeding 50 miles.
- 748.** For a line of railway from a point at or near the town of Red Deer to a point on the North Saskatchewan River at or near Rocky Mountain House; not exceeding 70 miles.
- 749.** To the Canadian Pacific Railway Company, for a line of railway from Winnipeg Beach northerly to Gimli, not exceeding $9\frac{1}{2}$ miles; and for a line from Gimli to Riverton, not exceeding 25 miles; not exceeding in all $34\frac{1}{2}$ miles.
- 750.** To the Canadian Pacific Railway Company, for a line of railway from Moose Jaw; in a north-westerly direction; not exceeding 123 miles.
- 751.** To the Eastern Townships Railway Company, for a line of railway from the Intercolonial Railway at St. Leonard's Junction to Dudswell; not exceeding 36 miles.
- 752.** To the Quebec, Montreal and Southern Railway Company, for a line of railway from Noyan Junction to the international boundary, not exceeding 8 miles; and for a line of railway from St. Lambert to St. Constant, not exceeding 15 miles; not exceeding in all 23 miles.
- 753.** To the Quebec and Lake St. John Railway Company, for the following lines of railway:—
- (a) from Valcartier Station to St. Catherine; not exceeding 3.8 miles;
 - (b) from Valcartier Station towards Gosford; not exceeding $5\frac{1}{2}$ miles;
 - (c) from the end of the 35th mile of the branch to La Tuque, on the River St. Maurice, to La Tuque Falls; not exceeding 5 miles;
 - (d) from La Tuque Falls to the mouth of the River Croche, not exceeding 5 miles;
 - (e) from a point on La Tuque branch to the steamboat landing near La Tuque; not exceeding 1.6 miles;
- not exceeding in all 20.9 miles.
- 754.** To the Quebec and Lake St. John Railway Company, for a line of railway from Herbertville to St. Joseph d'Alma; not exceeding 10 miles.
- 755.** To the St. Maurice Valley Railway Company, for a line of railway from Three Rivers to Grand Mere; not exceeding 28 miles.
- 756.** For a line of railway from a point on the main line of the Great Northern Railway at or near St. Jerome to Charlemagne (Bout de l'Île); not exceeding 22 miles.

9-10 EDWARD VII., A. 1910

- 757.** To the North Eastern Railway Company, for a line of railway from a point east of Lake Temiskaming, at or near Villemarie, easterly : not exceeding 25 miles.
- 758.** To the Canadian Northern Quebec Railway Company, for a line of railway from Montreal to Hawkesbury ; not exceeding 65 miles.
- 759.** For a line of railway from Montreal to a point on the National Transcontinental Railway ; not exceeding 200 miles.
- 760.** To the Quebec Central Railway Company, for an extension of its line of railway from St. George to or towards St. Justine ; not exceeding 30 miles.
- 761.** To the Maritime Coal Railway and Power Company, for a line of railway from Chignecto to a point on the Northumberland Straits, not exceeding 25 miles ; and from Joggins Mines to a point on the Bay of Fundy, not exceeding 1 mile ; not exceeding in all 26 miles.
- 762.** For a line of railway from St. Peters, in the County of Richmond, by the south shore of Bras d'Or Lake, to Sydney ; not exceeding 60 miles.
- 763.** To the Nipissing Central Railway Company, for a line of railway from a point on the Temiskaming and Northern Ontario Railway, at or near the town of New Liskeard, to a point in the township of Guigues, in the province of Quebec ; not exceeding 13 miles.
- 764.** To the Vancouver Island and Eastern Railway Company, for a line of railway from a point on the Esquimalt and Nanaimo Railway, near Campbell River, towards Fort George, on the line of the Grand Trunk Pacific Railway ; not exceeding 100 miles.
- 765.** To the Vancouver, Westminster and Yukon Railway Company, for a line of railway from Vancouver towards Fort George, on the line of the Grand Trunk Pacific Railway ; not exceeding 100 miles.
- 766.** For a line of railway around Death Rapid, British Columbia ; not exceeding 4 miles.
- 767.** To the Pacific Northern and Omineca Railway Company, for a line of railway from Kittimat to the Telkwa River ; not exceeding 110 miles.
- 768.** For a line of railway from Nicola to a point at or near Penticton ; not exceeding 100 miles.
- 769.** For a line of railway from Carmi to Penticton ; not exceeding 50 miles.
- 770.** To the St. Mary and Western Ontario Railway Company, for a line of railway from Woodstock to Exeter ; not exceeding 45 miles.
- 771.** To the Algoma Central and Hudson Bay Railway Company, for a line of railway from a point on the Canadian Pacific Railway northward towards the National Transcontinental Railway ; not exceeding 50 miles.
- 772.** To the Grand Trunk Pacific Railway Company, for branch lines of railway from the line of the National Transcontinental Railway to Port Arthur and Fort William ; not exceeding 220 miles.

SESSIONAL PAPER No. 20

- 773.** To the Iac Seul, Rat Portage and Keewatin Railway Company, for a line of railway from a point at or near Kenora to the line of the National Transcontinental Railway; not exceeding 18 miles.
- 774.** To the Burk's Falls and French River Railway Company, for a line of railway from Burk's Falls to French River; not exceeding 85 miles.
- 775.** To the Thessalon and Northern Railway Company, for a line of railway from Thessalon, northerly; not exceeding 4 miles.
- 776.** To the Canadian Northern Ontario Railway Company, for a line of railway from Sudbury Junction to Hutton Mines; not exceeding 30 miles.
- 777.** To the Esquimalt and Nanaimo Railway Company, for a line of railway from Cowichan Bay to Cowichan Lake; not exceeding 24 miles.
- 778.** To the Canadian Northern Quebec Railway Company, for a line of railway from Hawkesbury to Ottawa; not exceeding 60 miles.
- 779.** For the following lines of railway :—
 (a) from Westfield to St. John, not exceeding 14 miles;
 (b) from Gagetown to Fredericton, not exceeding 40 miles;
 (c) from a point between Centreville and Woodstock to a point at or near Grand Falls, not exceeding 55 miles.
- 780.** To the Little Nation River Railway Company, for a line of railway from Papi-neauville on the Canadian Pacific Railway towards Lake Nomingue; not exceeding 30 miles.
- 781.** To the l'Avenir and Melbourne Railway Company, for a line of railway from Melbourne to Drummondville; not exceeding 28 miles.
- 782.** To the Quebec and Lake St. John Railway Company, for a line of railway from Chicoutimi south or southeast; not exceeding 5 miles.
- 2.** The Governor in Council may grant the subsidies hereinafter mentioned towards the construction and completion of the bridges also hereinafter mentioned, that is to say :—
- 783.** Towards the construction and completion of a railway bridge and approaches over the Nicolet River at Nicolet, in lieu of the subsidy granted by chapter 40 of 1907, section 2, \$15,000.
- 784.** To the Canadian Pacific Railway Company (lessees of the Calgary and Edmonton Railway Company), towards the construction and completion of a bridge over the Saskatchewan River connecting Strathcona and Edmonton, 15 per cent upon the amount expended thereon; not exceeding \$100,000.
- 785.** To the Quebec, Montreal and Southern Railway Company, towards the construction and completion of the following railway bridges :—
 (a) bridge across the Gentilly River, \$15,000;
 (b) bridge across the Becancour River, \$30,000;
 (c) bridge across the Richelieu River, \$30,000.
- 786.** To the Atlantic, Quebec and Western Railway Company, towards the construction and completion of the 26 railway bridges on its line of railway from Paspébiac to Gaspé, payable upon the completion of the said line of railway between the said points, \$250,000.

9-10 EDWARD VII., A. 1910

787. To the Interprovincial Railway Bridge Company of New Brunswick, towards the construction and completion of a railway bridge over the Restigouche River from Campbellton to Mission Point, not exceeding \$160,000.

788. To the Vancouver, Westminster and Yukon Railway Company, towards the construction and completion of a railway across Burrard Inlet.

3. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and shall include the amount expended upon any bridge, up to and not exceeding \$25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway nor the cost of terminals nor the cost of right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of the Department of Railways and Canals, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable; and does not exceed the true, actual and proper cost of the construction of such railway.

4. The subsidies hereby authorized towards the construction of any railway or bridge shall be payable out of the Consolidated Revenue Fund of Canada, and may, unless otherwise expressly provided in this Act, at the option of the Governor in Council, on the report of the Minister of Railways and Canals, be paid as follows:—

(a) Upon the completion of the work subsidized; or

(b) By instalments, on the completion of each ten-mile section of the railway, in the proportion which the cost of such completed section bears to that of the whole work, undertaken; or

(c) Upon the progress estimates on the certificate of the Chief Engineer of the Department of Railways and Canals that in his opinion, having regard to the whole work undertaken and the aid granted, the progress made justifies the payment of a sum not less than thirty thousand dollars; or

(a) With respect to (b) and (c), part one way, part the other.

The subsidies hereinbefore authorized to be granted to companies named shall if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as establish to the satisfaction of the Governor in Council their ability to construct and complete the said railway and bridges respectively; all the lines and the bridge for the construction of which subsidies are granted, unless they are already commenced, shall be commenced within two years from the first day of August, 1908, and completed within a reasonable time, not to exceed four years from the said first day of August, to be fixed by the Governor in Council, and shall also be constructed according to descriptions, conditions and specifications approved by the Governor in Council on the report of the Minister of Railways and Canals, and specified in each case in a contract between the Company and the said Minister, which contract the Minister, with the approval of the Governor in Council, is hereby empowered to make. The location also of such subsidized lines and bridges shall be subject to the approval of the Governor in Council.

6. The granting of such subsidies and the receipt thereof by the respective companies shall be subject to the condition that the Board of Railway Commissioners for Canada may at all times provide and secure to other companies such running powers, traffic arrangements and other rights as will afford to all railways connecting with the railway and bridges so subsidized reasonable and proper facilities in exercising such running power, fair and reasonable traffic arrangements with connecting companies, and

SESSIONAL PAPER No. 20

equal mileage rates between all such connecting railways; and the said Board shall have absolute control, at all times, over the rates and tolls to be levied and taken by any of the companies, or upon any of the railways and bridges hereby subsidized; Provided always that any decision of the said Board made under this section may be at any time varied, changed or rescinded by the Governor in Council, as he deems just and proper.

7. Every company receiving a subsidy under this Act, its successors and assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transportation for men, supplies, materials and mails over the portion of the lines in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars properly equipped for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the department of the Government for which such service is being performed, and the company performing it, and, in case of disagreement, then at such rates as are approved by the Board of Railway Commissioners for Canada; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of the subsidy received by the company under this Act.

8. As respects all railways and bridges for which subsidies are granted by this Act, the company at any time owning or operating any of the railways or bridges shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers showing the cost of constructing the railway or bridge, the cost of operating it, and the earnings thereof.

9. The Governor in Council may make it a condition of the grant of the subsidies herein provided that the company shall lay the railway with new steel rails and fastenings made in Canada and shall purchase all materials and supplies required for the construction of the railway and bridges, and the rolling stock for the first equipment of the railway, from Canadian producers, if such rails, fastenings, materials, supplies and equipment are procurable in Canada of suitable quality and upon terms as favourable as elsewhere, of which the Minister of Railways and Canals shall be the judge.

10. Whenever a contract has been duly entered into with a company for the construction of any line of railway hereby subsidized, the Minister of Railways and Canals, at the request of the Company, and upon the report of the Chief Engineer of the Department of Railways and Canals, and his certificate that he has made careful examination of the surveys, plans and profile of the whole line so contracted for, and has duly considered the physical characteristics of the country to be traversed and the means of transport available for construction, naming the reasonable and probable cost of such construction, may, with the authorization of the Governor in Council, enter into a supplementary agreement, fixing definitely the maximum amount of the subsidy to be paid, based upon the said certificate of the Chief Engineer, and providing that the company shall be entitled to be paid, as the minimum, the ordinary subsidy of \$3,200 per mile, together with sixty per cent of the difference between the amount so fixed and the said \$3,200 per mile, if any; and the balance, forty per cent, shall be paid only on completion of the whole work subsidized, and in so far as the actual cost, as finally determined by the Governor in Council upon the recommendation of the Minister of Railways and Canals, and upon the report and certificate of the said Chief Engineer, entitles the company thereto: Provided always—

(a) that the estimated cost, as certified, is not less on the average than \$18,000 per mile for the whole mileage subsidized;

(b) that no payment shall be made except upon a certificate of the Chief Engineer that the work done is up to the standard specified in the company's contract;

(c) that in no cases shall the subsidy exceed the sum of \$6,400 per mile.

INDEX

A

	Part.	Page.
Accidents and casualties:—		
Prince Edward Island Railway..	III	204
Sault Ste. Marie Canal..	VI	255
Accountant and Auditor of P.E.I. Ry., Statements of the.. . . .	III	190
Accountant of Department, Statements of the.. . . .	I	31
Collectors of Canal Tolls in account with Revenue.. . . .	I	58
Expenditure during fiscal period ended March 31, 1909.. . . .	I	31
" on construction, maintenance, &c., of canals.. . . .	I	33
" on construction and enlargement of canals.. . . .	I	55
" on canals, also revenue received.. . . .	I	56
Baie Verte Canal..	I	34
Beauharnois Canal..	I	36
Carillon and Grenville Canal..	I	45
Chambly Canal..	I	49
Cornwall Canal..	I	40
Culbute Lock and Dam..	I	46
Farran's Point Canal..	I	41
Galops Canal..	I	41
Lachine Canal..	I	35
Lake St. Francis..	I	39
Lake St. Louis..	I	38
Murray Canal..	I	50
Ottawa River Works..	I	47
Rapide Plat Canal..	I	41
Rideau Canal..	I	47
Sault Ste. Marie Canal..	I	53
Soulanges Canal..	I	54
Ste. Anne's Lock and Canal..	I	44
St. Lawrence River and Canals, Surveys, &c.. . . .	I	37
St. Ours Lock..	I	48
St. Peter's Canal..	I	33
Tay Canal..	I	52
Trent Canal..	I	51
Welland Canal..	I	43
Williamsburg Canals..	I	41
Hydraulic and other rents..	I	57
Miscellaneous expenditure..	I	76
Railway expenditure and revenue..	I	74
Annapolis and Digby..	I	69
Canada Eastern..	I	73
Canadian Pacific..	I	68
Cape Breton..	I	65
Carleton Branch..	I	63
Drummond County..	I	70
Eastern Extension..	I	62
Intercolonial..	I	60

	Part.	Page.
Accountant of Department—Railway Expenditure and Revenue— <i>Continued.</i>		
Montreal and European Short Line.	I	66
National Transcontinental.	I	72
Oxford and New Glasgow.	I	64
Prince Edward Island.	I	67
Yukon Territory Works.	I	71
Railway Expenditure on Capital Account.	I	74
Recapitulation—Railways.	I	75
“ Railways and Canals.	I	77
		{56
Revenue received from canals.	I	{58
		{77
Subsidies voted for railways.	I	78
Alward, Mr. H. F. <i>See</i> ‘Solicitor.’.	II	86
Annapolis and Digby Railway, expenditure on construction.	I	69
Armstrong, John. <i>See</i> ‘Hudson Bay Railway Surveys’.	V	215

B

Baie Verte Canal, expenditure on surveys.	I	34
Beauharnois Canal: —		
Expenditure.	I	36
Sketch showing section of lock.	VII	293
Superintending Engineer, Report of the.	VI	228
Water on mitre sill.	VI	235
Board of Railway Commissioners.	..	15
Burns, C. F., Auditor of disbursements.	III	178
Burpee, Mr. T. C., Engineer of Maintenance, Windsor Branch.	III	179
“ “ “ I. C. Ry.	III	137
Butler, Mr. M. J. <i>See</i> ‘Deputy Minister.’		

C

Canada Eastern Railway—Expenditure.	I	73
Canadian Pacific Railway Co.—Expenditure on construction.	I	68
Canal navigation routes, descriptions of.	VII	295
		{56
Canals Revenue.	I	{58
		{77
Cape Breton Ry., expenditure on construction.	I	65
Carillon Canal: —		
Description of canal.	VII	301
Expenditure.	I	45
Sketch showing section of lock.	VII	292
Superintending Engineer, Report of the.	VI	232
Water on mitre sill.	VI	237
Carleton Branch Ry. expenditure on construction.	I	63
Chambly Canal: —		
Description of route.	VII	303
Expenditure.	I	49
Sketch showing section of lock.	VII	292
Superintending Engineer, Report of the.	VI	230
Water on mitre sill.	VI	235

SESSIONAL PAPER No. 20

	Part.	Page.
Chief Engineer, Report of the. <i>See</i> 'Deputy Minister.'		
Chief Engineer of the Interecolonial Railway, Report of the.	III	126
Chief Engineer, P.E.I. Railway, Report of the.	III	199
Comptroller of the Government Railways.	II	{ 158 180
Consulting Engineer to the Government, Report of the.	IV	209
Contracts entered into during year.	II	90
Cornwall Canal:—		
Description of works.	VII	297
Expenditure.	I	40
Fines and damages.	VI	267
Resident Engineer, Report of the.	VI	243
Superintendent of Operation, Report of.	VI	264
Water on mitre sills.	VI	266
Culbute Canal, expenditure.	I	46

D

Damages released.	II	110
Deputy Minister, Report of the.		7
Board of Railway Commissioners.		15
Canals.		19
Employees' Provident Fund.		24
Expenditure on Railways.		8
" Canals.		8
General Summary.		7
General Observations.		24
Government action as to subsidized railways.		19
Government Railways in operation.		8
Intercolonial.		{ 9 12
Prince Edward Island.		14
Windsor Branch.		13
Maps to accompany same. (in separate pocket)		
National Transcontinental Railway.		15
Quebec Bridge.		24
Revenue from Government works.		8
Railway Subsidies.		19
Surveys for a railway to Hudson Bay.		17
Devereux, Mr. J. H. <i>See</i> 'St. Peter's Canal'.	VI	268
Drummond County Railway:—		
Expenditure.	I	70

E

Eastern Extension Railway, expenditure on construction.	I	62
Employees Provident Fund, I.C.R. and P.E.I. Ry.	III	205
Engineer of Maintenance, Windsor Branch, Report of the.	III	179
" " Interecolonial Railway, Report of the.	III	137
Expenditure on canal works generally.	I	{ 33 56

F

	Part.	Page.
Farran's Point Canal:—		
Expenditure on capital account..	I	41
Description of canal..	VII	297
Water on mitre sills..	VI	266
Fripp, Mr. F. B. See 'Sault Ste. Marie'..	VI	254

G

Galops Canal:—		
Construction..	VI	253
Description of route..	VII	298
Expenditure on capital account..	I	41
North Channel, improvement works..	VI	253
Superintending Engineer, Report of the..	VI	253
Water on mitre sills..	VI	266
General Manager of Government Railways, Reports of the:—		
Employees' Provident Fund, Report of Chairman..	III	205
Intercolonial..	III	121
Prince Edward Island..	III	182
Windsor Branch..	III	178
Government Railways in operation..	..	8
Grand River Feeder..	VII	299
Grant, Mr. J. A. See 'Trent Canal'..	VI	248
Grand Trunk Pacific, Report of Consulting Engineer..	IV	209
Grenville Canal:—		
Description of works..	VII	301
Expenditure..	I	45
Sketch showing section of canal..	VII	292
Superintending Engineer, Report of the..	VI	232
Water on mitre sills..	VI	237
Guarantee agreements entered into for railway construction..	II	86

H

Halifax to Montreal, distance from..	VII	271
Hodgson, Mr. S. F. See 'Mechanical Accountant P.E.I. Ry.'..	III	202
Hudson Bay Railway Surveys..	V	215
Chief Engineer, progress report..	V	215
Deputy Minister, report on..	..	17
Line to Churchill..	V	219
Line to Port Nelson..	V	220
Huggan, Mr. See 'Accountant and Auditor of Prince Edward Island Railway'..	III	190
Hydraulic and other rents..	I	57

SESSIONAL PAPER No. 20

I

	Part.	Page.
Intercolonial:—		
Capital account.	III	{121 158
Deputy Minister, reference to.	..	9
Chief Engineer, Report of the.	III	126
Comptroller, Statements of the.	III	158
Description of route.	VII	271
Employees' Provident Fund.	III	{125 205
Engineer of Maintenance, Report of the.	III	137
Expenditure, Statement by Accountant of Department.	I	60
Freight carried.	VII	275
General Manager, Report of.	III	121
Length of road.	III	121
Locomotive department at Moncton.	III	147
Mechanical Accountant, Statements of the.	III	144
Passenger Statement.	VII	276
Receipts.	VII	274
Revenue account.	III	123
Deputy Minister, reference to.	..	10
Rolling stock.	III	146
Stores account.	III	124
Superintendent of motive power—report.	III	144
Traffic, Statistics relating to.	VII	273
Working expenses.	III	124

J

Joughins, Mr. G. R., Supt. Motive Power, Intercolonial Railway.	III	144
--	-----	-----

L

Lachine Canal:—		
Description of route.	VII	296
Expenditure.	I	35
Sketch showing section of canal.	VII	292
Superintending Engineer, Report of the.	VI	225
Water on mitre sills.	VI	234
Lake St. Francis, expenditure.	I	39
Lake St. Louis channel, expenditure.	I	38
Leases of water-powers and properties granted.	II	94
Little, Mr. W. C. See 'Accountant of Department'.	I	31

M

Mackenzie, Mr. W. B. See 'Chief Engineer, L.C.R.'.	III	126
See 'Chief Engineer, P.E.I.'.	III	199
Maps to accompany report of Deputy Minister.(in pocket)		
Marceau, Mr. E. See 'Quebec Canals'.	VI	225
McClellan, Mr. J. H., Supt. of Trent Canal.	VI	244

	Part.	Page.
Mechanical Accountant of the I.C.R., Statements of the.. . . .	III	144
Mechanical Accountant of Prince Edward Island Ry.. . . .	III	202
Mechanical Superintendent P.E.I. Ry., Report of the.. . . .	III	200
Miscellaneous	VII	269

Canals:—

Construction and enlargement, Atlantic Ocean to Bras d'Or Lakes.. . . .	VII	289
Construction and enlargement, Lachine to Ottawa.. . . .	VII	288
“ “ Lake Ontario to Georgian Bay.. . . .	VII	289
“ “ Montreal to Port Arthur.. . . .	VII	288
“ “ Ottawa to Kingston.. . . .	VII	288
“ “ St. Johns to Sorel.. . . .	VII	289
Dates of opening and closing of canals.. . . .	VII	289
Diagrams showing dimensions of locks.. . . .	VII	292
Freight traffic.. . . .	VII	290

Intercolonial:—

Coal carried from N. S. collieries.. . . .	VII	277
Earnings.. . . .	VII	274
Expenses.. . . .	VII	273
Flour and meal carried.. . . .	VII	278
Fresh and salt fish carried.. . . .	VII	282
Grain carried.. . . .	VII	279
Grain carried for shipment.. . . .	VII	278
Length of line and branches.. . . .	VII	271
Live stock carried.. . . .	VII	280
Local and through freight.. . . .	VII	275
Local and through passengers.. . . .	VII	276
Lumber carried.. . . .	VII	279
Ocean-borne goods carried.. . . .	VII	280
“ passenger business at Halifax.. . . .	VII	283
“ “ “ at St. John.. . . .	VII	284
“ “ “ at Quebec.. . . .	VII	284
“ freight traffic via Halifax.. . . .	VII	285
“ freight traffic via St. John.. . . .	VII	285
Raw and refined sugar carried.. . . .	VII	281
Table of distances.. . . .	VII	271

Prince Edward Island Ry., expenses, earnings, freight and passenger traffic.. . . .	VII	287
Windsor Branch, earnings, expenses, and profits and losses.. . . .	VII	286

Money subsidy agreements with railway companies.. . . .	II	88
--	----	----

Montreal and European Short Line Railway, expenditure on construction.. . . .	I	66
--	---	----

Montreal , Ottawa and Kingston Canals Division, description of routes.. . . .	VII	300
--	-----	-----

Montreal to Port Arthur, route, cost, &c.. . . .	VII	295
---	-----	-----

Murray Canal:—

Description of works.. . . .	VII	298
Expenditure.. . . .	I	50
Resident Engineer, Report of the.. . . .	VI	243
Superintendent of Operation, Report of the.. . . .	VI	265
Water on mitre sills.. . . .	VI	266

SESSIONAL PAPER No. 20

N

	Part.	Page.
National Transcontinental Railway.. . . .	..	15
Expenditure.. . . .	I	72
Western Division, Report of Chief Engineer.. . . .	IV	207
Mountain section.. . . .	IV	211
Prairie section, construction.. . . .	IV	209
North Channel, St. Lawrence River, straightening, &c., and building dam.. . . .	VI	253

O

Oxford and New Glasgow Railway, expenditure on construction.. . . .	I	64
Ottawa River Canals.. . . .	VII I	300 47

P

Perth Branch of Rideau Navigation.. . . .	VII	302
Peterborough Lift Lock, sketch.. . . .	VII	294
Phillips, Mr. A. T. <i>See</i> 'Rideau'	VI	258
Poole, Mr. W. S. <i>See</i> 'Mechanical Superintendent'.. . . .	III	200
Pottinger, Mr. D. <i>See</i> 'General Manager'.. . . .	III	121 178 182 205
Prince Edward Island Railway:—		
Accidents.. . . .	III	204
Accountant and Auditor, Statements of the.. . . .	III	190
Capital account.. . . .	III	184
Chief Engineer, Report of the	III	199
Employees' Provident Fund, Second annual report.. . . .	III	205
Expenditure on construction.. . . .	I	67
Freight earnings.. . . .	VII	287
Freight transported.. . . .	III	198
General Manager, Report of the.. . . .	III	182
Length of line.. . . .	III	183
Mechanical Accountant, Statements of the.. . . .	III	202
Mechanical Superintendent, Statements of the.. . . .	III	200
Rolling stock.. . . .	III	202
Superintendent, Report of the.. . . .	III	183
Working expenses.. . . .	III	185
Property conveyed by the Crown and lands conveyed to the Crown	II	106

Q

Quebec Bridge.. . . .	..	24
Quebec Canals, Report of the Superintending Engineer.. . . .	VI	225
Beauharnois Canal.. . . .	VI	228
Canal Stores.. . . .	VI	225
Carillion and Grenville Canals.. . . .	VI	232
Chambly Canal.. . . .	VI	230
Depth of water on the several mitre sills.. . . .	VI	235

	Part.	Page.
Quebec Canals—Report of the Superintending Engineer—Continued.		
Lachine Canal.. . . .	VI	225
Soulanges Canal.. . . .	VI	229
Surveys.. . . .	VI	228
St. Anne's Lock.. . . .	VI	232
St. Ours Lock.. . . .	VI	231

R

Railway Subsidies:—

Deputy Minister's report, reference to.. . . .	..	19
Subsidies voted for railways.. . . .	I	78
Subsidy Acts passed.. . . .	VIII	309

Rapide Plat Canal:—

Description of route.. . . .	VII	298
Expenditure on capital account.. . . .	I	41
Superintendent, Report of the.. . . .	VI	265
Water on mitre sills.. . . .	VI	266

Rheume, Mr. L. N. See 'St. Lawrence Canals.. . . .	VII	253
---	-----	-----

Richelieu and Lake Champlain system of navigation.. . . .	VII	302
--	-----	-----

Rideau Canal:—

Expenditure on canal.. . . .	I	47
Description of route.. . . .	VII	300
Perth Branch.. . . .	VII	302
Sketch showing section of lock.. . . .	VII	292
Superintending Engineer, Report of the.. . . .	VI	258
Water on mitre sills.. . . .	VI	264

River St. Lawrence and Lakes:—

Description of route.. . . .	VII	288
Expenditure on surveys.. . . .	I	37
North Channel, improvement.. . . .	VI	253
Removal of shoals.. . . .	VI	253

Ross, Mr. J. W. LeB. See 'Sault Ste. Marie'.. . . .	VI	255
--	----	-----

S

Sargent, C. D. See 'St. Lawrence Canals.. . . .	VI	243
--	----	-----

Sault Ste. Marie Canal:—

Accidents, damages and repairs.. . . .	VI	255
Comparative statement since opening of lock.. . . .	VI	257
Description of works.. . . .	VII	300
Expenditure.. . . .	I	53
Maintenance and operation.. . . .	VI	255
Superintendent, Report of the.. . . .	VI	255
Improvement work, Report of the Engineer in charge.. . . .	VI	254
Sketch showing section of lock.. . . .	VII	293

Schreiber, C., Report on Western Division of National Transcontinental Railway.. . . .	IV	209
---	----	-----

Shannon, Mr. S. L. See 'Comptroller'.. . . .	II	{ 158 180
---	----	--------------

SESSIONAL PAPER No. 20

	Part.	Page.
Sharp, Mr. G. A. <i>See</i> 'Superintendent of P. E. I. Ry.'	III	183
Solicitor, Statements of Departmental.	II	85
Contracts entered into during year	II	90
Damages released	II	110
Guarantee agreements entered into for railway construction	II	86
Leases of water-powers and properties granted	II	94
Money subsidy agreements with railway companies	II	88
Property conveyed by the Crown and lands conveyed to the Crown	II	106
Soulanges Canal:—		
Description of works	VII	297
Engineer, Report of the	VI	229
Expenditure	I	54
Sketch showing section of lock	VII	293
Water on mitre sills	VI	234
Stewart, Mr. W. A. <i>See</i> 'St. Lawrence Canals'	VI	264
Stikine-Teslin Railway, Expenditure.	I	71
Subsidies. <i>See</i> 'Railway Subsidies'	VIII	309
Superintendent of Motive Power, L.C.R., Report of the.	III	144
Superintendent of P.E.I Ry., Report of the.	III	183
St. Anne's Canal:—		
Description of works	VII	300
Expenditure	I	44
Superintending Engineer, Report of the	VI	232
Water on mitre sills	VI	236
Sketch showing section of canal	VII	292
St. Lawrence Canals—Construction:—		
Cornwall Canal	VI	243
Galops Canal	VI	253
Lift Lock, water on mitre sills	VI	266
Murray Canal	VI	243
Resident Engineer, Report of the	VI	243
Superintendent of operation, Report of	VI	264
Water on mitre sills	VI	243
Williamsburg Canals	VI	243
St. Lawrence River and Lakes:—		
Description of routes	VII	295
Expenditure on surveys	I	37
North Channel, construction	VI	253
St. Ours Lock and Dam:—		
Description of lock	VII	303
Expenditure	I	48
Sketch showing section of lock	VII	292
Superintending Engineer, Report of the	VI	231
Water on mitre sills	VI	236
St. Peter's Canal:—		
Description of works	VII	306
Expenditure on construction	I	33
Report of Mr. Devereaux	VI	268
Sketch showing section of lock	VII	292

T

	Part.	Page.
Tay Canal, expenditure. <i>See also 'Rideau'</i>	I	52
Transcontinental railway communication:—		
Report of Engineer of Western Division	IV	209
Trent Canal:—		
Construction	VI	248
Description of works	VII	303
Engineer in charge of surveys, Report of	VI	242
Expenditure	I	51
Sketch showing lift lock at Peterborough	VII	294
Superintendent, Report of the	VI	244
Superintending Engineer, Report of the	VI	248

W

Walker, Mr. J. J. <i>See 'Mechanical Accountant'</i>	II	144
Walsh, Mr. E. J. <i>See 'Trent Canal Surveys'</i>	VI	242
Welland Canal:—		
Damages to property	VI	242
Description of canal and branches	VII	299
Engineer in charge of improvements at Port Colborne	VI	238
Expenditure	I	43
Grand River Feeder	VII	299
Improvements at Port Colborne	VI	238
Port Maitland branch	VII	299
Sketch showing section of lock	VII	293
Superintending Engineer, Report of the	VI	238
Water on mitre sills	VI	241
Welland River branches	VII	299
Weller, Mr. J. L. <i>See 'Welland Canal'</i>	VI	238
Williamsburg Canals:—		
Description of works	VII	297
Expenditure	I	41
Fines and damages	VI	267
Resident Engineer, Report of the	VI	243
Superintendent of Operation, Report of	VI	266
Windsor Branch:—		
Comptroller, Statements of the	III	180
Engineer of Maintenance, Report of the	III	179
Description of the road	VII	232
Earnings	VII	286
General Manager, Report of the	III	178
Length of route	VI	272

Y

Yukon Railway—Expenditure	I	71
-------------------------------------	---	----



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